

Foreword

NINETEEN hundred and forty-one is unique in American business annals. Upon its record are inscribed the events of the initial year of transition from the free American economy of the thirties to an economy totally mobilized for war. But such is the speed with which change occurs today that 1941 now seems almost as strange and far removed from the present as do the relatively minor crises of the late nineteenth century.

Two sharply different themes dominate the 1941 symphony: The high, piercing tones of business-as-usual and the rumbling bass crescendo of war preparations. A record output of goods and services for civilian consumption was produced, while simultaneously new arms plants were erected, first slowly, then in faster tempo. As the Government built stock piles of strategic and critical materials, businessmen and consumers sought to cover their wants against the lean years to come.

While income payments flowed in expanding volume to the Nation's producers, each considered wistfully those ways and means of averting inflation, which would apply to the prices and incomes of others, but not to his own. Hence there was much debate while action waited. Meanwhile the price level surged strongly upward. As some portions of business insisted that their industrial plants could not possibly be converted to war output, others undertook conversion under incentives applied by public control of the scarce materials so essential to war.

The outbreak of hostilities at the year-end served to arrest this division within the economy. Then imperative necessity welded all business to the common task of a maximum war effort. Sacrifice, which all sought to postpone, and in so doing only increased, now confronts every group within the community. Each individual is called upon to bear his share in

lower living standards or abandoned privilege or harder work.

The experience of 1941 has afforded instruction of great significance for both a wartime and a peacetime economy. Not only has the nature of the many-sided task of the immediate future been clarified, but valuable guides have been developed and techniques perfected. At the same time, light has been thrown on the darkness surrounding some of the most confusing social and economic problems of the past decade. The ability of the Nation to harness its resources to a great productive effort is being demonstrated. Unemployment need not be a rock upon which the State must founder. We now know that in normal times this economy can operate within the confines of its traditional institutions at an efficiency assuring an increasing livelihood for all.

These and other lessons are to be gleaned from the review presented in the following pages. Therein the multiple economic developments of the past year are set forth in analytical detail, with an eye to the changes that are to be expected over the near future.

The introduction, certain sections, and the editing of the whole, are the work of John D. Wilson, who is in charge of the Survey. Contributors include Gerald J. Matchett (prices), Warren Wilhelm and Millard Gallop (industrial production), Edward O. Bassett (agriculture, employment and working conditions), William C. Shelton (consumption), Frederic C. Murphy (inventories), S. Morris Livingston (construction), Albert E. Sanderson (shipping), Donald E. Church (railroads), Hal Lary and Elenor Gould (international trade and finance), and John B. Lindeman (federal finance and banking).

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An Economic Review of 1941

THE initial stage of the transition to a war economy pushed business activity to unprecedented heights in 1941. Neither strictly devoted to preparation for war, nor to increased output for consumption, the economy embraced a combination of both. In the resulting general expansion, even the most laggard of business shook free the lethargy that had encompassed it for the past decade.

The basic influence impelling business to this new peak was the growth in arms expenditures. These were more than quadrupled during the year, reaching a monthly volume of 2 billion dollars by December. But until the year end the activity they represented interfered only to a limited degree with the normal course of business. Rather, the growing purchasing power channeled into the hands of consumers through the arms program and the huge private capital outlay incident to it, was met by a vast expansion in the output of goods for consumption. For the production of finished armaments was to a very large degree centered in plants newly constructed or newly outfitted, with conversion of civilian facilities being undertaken only to a limited extent.

An advance of such general nature and of such size was possible only with the utilization of unemployed resources—labor, raw material, and finished plant. Each of these had limits—and the first to be revealed was the capacity for producing raw materials. By the fourth quarter metal supplies in particular became inadequate to support a further increase in armament production and essential capital formation without restricting the output of consumer durables. Such a restriction was then undertaken, but not to a degree so drastic as to prevent the establishment of a new record consumer durable output for the year as a whole.

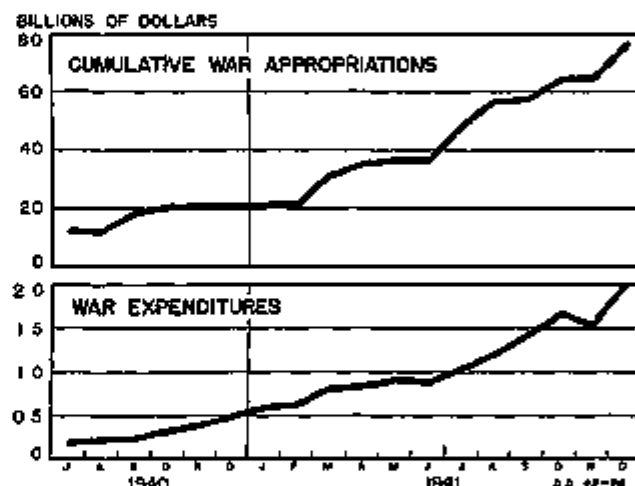
The actual outbreak of hostilities made imperative the rapid achievement of the country's maximum war potential—the utilization of all available resources and the earmarking for military use of the largest feasible proportion of output. With this end in view, the contributions of the year 1941 can, in retrospect, be examined. The great production of consumers' goods enabled the Nation to enter a hard struggle with the largest consumer stocks in its history—but this was achieved at the expense of only a limited stock of finished armaments with which to meet the very great demands of a world-wide conflict. Thus, there was created the necessity for an immediate and radical change in the character of our industrial output—the multiplication of war goods many fold and the drastic curtailment of civilian goods in order to realize the national objective.

Advance in Armament Expenditures.

Expenditures on the military program had moved up at a moderately rapid pace in 1941. The arms outlay in July 1940 had been 186 million dollars. By December of 1940 it had risen to 483 million, and a year later was at a monthly rate of 2 billion. But much of the advance took the form of increased expenditure on light supplies (particularly in the early stages of the program), and on construction and industrial equipment; only in part did it represent heavier output of finished armaments and merchant ships.

These expenditures and their indirect effects on consumer output were reflected in the expansion of the

Figure 1.—United States War Appropriations (Cumulative) and War Expenditures



NOTE.—Appropriations represent funds made available by the Congress and commitments of the Reconstruction Finance Corporation. Expenditures are checks paid by the U. S. Treasury Department and by the Reconstruction Finance Corporation.

SOURCE: War Production Board

national income. From an annual rate of 76 billion dollars in mid-1940, income climbed to an 82-billion-dollar pace at the beginning of 1941. By the final quarter of the year it had approached the 100-billion-dollar rate. For the year as a whole, national income stood at the all-time peak of 94.5 billion dollars, almost a fourth larger than the 77.1 billion of 1940. Though approximately one-third of the expansion in 1941 was the result of higher prices, the advance in real income (or the actual volume of goods and services produced) was the most rapid ever recorded.

Notwithstanding enlarged consumption, the proportion of employed resources devoted to military effort increased markedly throughout the year. A rough measure of the proportion is obtained from the relation of armament expenditures to the gross income (i. e., the sum of the values of all goods and services produced,

including those produced for replacement and depreciation). The 2-billion-dollar defense expenditure in the first quarter of 1941 was equivalent to approximately one-twelfth of the gross income of that period, while the 5.2-billion-dollar expenditure in the final quarter was equivalent to between roughly one-fifth and one-sixth of the larger gross income at that time.

This was not an inconsiderable gain and approached the peak share of resources which the United States diverted to military output in World War I. Nevertheless, the proportion fell far short of that employed by the country's enemies as well as by its principal allies.

The attack on this country on December 7, 1941, caused an upward revision of all schedules in preparation for a maximum military effort. At the year end, the President stated that the country must be prepared to devote 50 percent of its income to the prosecution of war, and the budget submitted to Congress called for an arms expenditure of 56 billion dollars in fiscal year 1943.

That such an outlay is possible is a tribute to the strength of the Nation's basic resources at the time it entered into armed conflict. In general, its raw materials—agricultural and mineral—were under the most extensive development in its history. Moreover, heavy imports from other areas had provided stockpiles for military needs of the materials not sufficiently available within the hemisphere. Capital plant also was in record size, and in such condition that a large proportion of the resources ordinarily devoted to maintenance and repair (the production of which is included in gross but not in net national income) could be freed for turning out finished armaments. Finally, despite a further decline in reported unemployment to under 4 million at the end of the year, the labor supply that could be made available for the industrial front was adequate to support a further expansion of aggregate production while still permitting the requisite large increase in the armed forces.

Despite the magnitude of these basic resources, however, serious obstacles need to be overcome in order to realize the goals established by the President. In addition to the vast organizational problems involved in converting existing civilian durable goods plant to the production of finished armaments, certain raw material facilities must be further expanded (particularly metals and chemicals), the output of machinery (especially machine tools) needs to be stepped up markedly, the building of ships for transport of men and supplies abroad must be increased tremendously—to name but a few of the more formidable tasks.

The War Program at the End of 1941.

These and other problems associated with marshaling the country's resources for warfare were the concern of a complex of administrative organizations established

by the Government and charged with responsibility for directing the National effort. Never static, but developing with changing needs and understanding of the task, these organizations work closely with the Army and Navy, industry, and labor, in implementing the economic aspects of the Nation's political and military policies.

Foremost among such organizations throughout 1941 was the Office of Production Management, successor early in January 1941 to the National Defense Advisory Commission, and charged with the task of expediting the military preparedness program. This agency was reorganized on January 16, 1942, as the War Production Board, and to the head of the latter organization was delegated the wide authority believed necessary to step up the military procurement program to the rate desired.

The program which the War Production Board and its predecessors was called upon to develop was not confined to vast arms supplies for the United States. To these were added after March 11, 1941 (by passage of the Lend-Lease Act), large military requirements of those nations then opposing the Axis. From June 11, 1940, through 1941, a total of 76.5 billion dollars—more than twice the arms expenditure by the United States in World War I—had been appropriated or authorized by Congress for military purposes. More than two-thirds of this aggregate was the result of acts passed in 1941.

Table 1.—United States Government Financed War Program, by Object, as of December 31, 1941

Item	Millions of dollars	Percent of total
Total	76,473	100.0
Armaments production, total	49,454	65.2
Airplanes, parts, and accessories	13,240	17.3
Ordnance	18,463	24.1
Naval ships	9,403	12.3
Merchant ships	2,129	2.8
Other munitions and supplies	7,278	9.5
War construction, total	15,383	20.1
Industrial facilities (land, buildings, and equipment)	7,537	10.4
Ports, depots, stations	6,053	7.9
Housing	1,793	2.3
Nonmunitions, total	11,233	14.7
Stockpile	2,269	3.0
Agricultural exports (lend-lease)	1,522	2.0
Pay, subsistence, and travel	4,223	5.5
Miscellaneous nonmunitions	3,039	4.0

Source: War Production Board.

According to the appropriations, this tremendous sum was to be allocated in a general way among the uses set forth in table 1. Moreover, as of November 30, obligations totaling 47.4 billions had been undertaken.

Basic to the advance in arms output during 1941 and for subsequent periods was the plant construction program, for as already suggested, the conversion of existing consumer goods facilities to military use was limited prior to 1942. Even as early as 1940 facilities for producing finished armament were being expanded,

The Defense Plant Corporation, a subsidiary of the Reconstruction Finance Corporation, had loaned 2.0 billion dollars by December 31, a large part of which represented outlay for raw material plant. Most of the public financing of aircraft facilities was also carried out through the Defense Plant Corporation. While this latter agency held title to facilities it financed, the contracts stipulated that plant management was to have an option to purchase within a certain time period at cost less depreciation.

General Plant Expansion in 1941.

The actual capital outlay on manufacturing facilities in 1941 was around 4.5 billion dollars. This investment was an all-time high, the previous peak having been the 3.2-billion-dollar outlay in 1920, a year of exceptionally high prices. Expenditure in 1918, the heaviest for World War I, was 2.5 billion, slightly more than the 2.3 billion in 1940.

While manufacturing capital outlay in 1941 was predominantly in industries connected with war output, investment in lines serving civilian needs also was sizable. Roughly one-half of the total occurred in direct war industries, with various ordnance industries (620 million dollars), aircraft (500 million), chemicals (525 million), and shipbuilding (450 million) in the vanguard. The aircraft outlay represented one of the most rapid growths of any major industry on record, as capital expenditure during 1941 alone was roughly 6 times the total investment recorded for the industry up to 1939.

Basic industries producing for both military and civilian use accounted for about one-fourth of the manufacturing capital outlay, with capital expenditures in iron and steel (520 million—the heaviest in the history of the industry), the nonferrous metals (300 million), and machinery (300 million), of particular importance.

The remaining fourth of the total outlay went into those industries which still were principally engaged in meeting civilian needs. Rising consumer income and demand after mid-1940 encouraged capital additions in many civilian lines. This capacity expansion continued until growing scarcity of materials and machinery after mid-1941 gradually rendered it impossible without priority assistance. Such aid, however, was formally denied by a ruling of the then-existing Supply, Priorities, and Allocation Board.

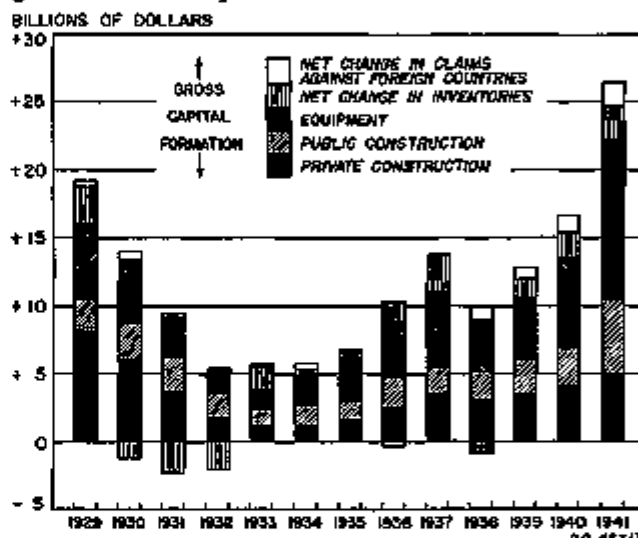
Notwithstanding these material difficulties, the food and kindred products industry made its heaviest capital outlay since the late twenties (320 million). Textiles, apparel, and related products (180 million dollars), automobiles (180 million), and pulp and paper (80

million), also made substantial outlays. The pulp and paper industry (and to some extent the food industry) was typical of certain lines that found it necessary to expand domestic plant because imports were excluded from belligerent areas.

Heavy Capital Formation in Other Lines

Though the increase in capital outlay during 1941 was most extensive in manufacturing, capital formation in all other sectors of the economy rose appreciably, and in many instances was the largest on record. All in all, gross capital formation² amounted to 27.9 billion dollars, as contrasted with 17.7 billion in 1940

Figure 3.—Gross Capital Formation in the United States



NOTE.—When negative values are shown the "Total Gross Capital Formation" consists of the positive values shown on the chart minus the negative values.
Source: U. S. Department of Commerce

and 19.4 billion in 1929, the previous peak. Moreover, addition of a record consumer durable output valued at 10 billion (1940 output equaled 8.3 billion and in 1929 the value was 9.2 billion) carried the total of all producers' and consumers' capital produced to 37.9 billion dollars.

Construction Up Sharply.

Here again the special demands of wartime were directly responsible for a large share of the expansion. For example, new construction totaled 10.8 billion dollars, about the equivalent of that in 1929. But the major increase was in public construction, which in addition to the regular types, included the heavy armament plant building and large construction of fortifications, air bases, barracks, and other military works. Similarly, not a little of the tremendous pro-

² Gross capital formation, as it is here used, includes the production of all producers' goods, the production of durable armaments, the net increase in business inventory, and the net addition to the Nation's claims on foreign countries.

duction of equipment—11.7 billion dollars in 1941 as against 8.7 billion in 1940—consisted of such war material as aircraft, tanks, and the like. A good part of this latter material also was exported to other countries and helped swell the volume by which exports exceeded imports.

The armament program exercised a more indirect influence on housing construction and on the output of consumer durables. Labor migration increased greatly during the year as the rise of new industries made necessary some redistribution of the labor force. The new housing required by this movement was supplemented by an additional heavy demand stemming from rising consumer incomes, and the 1941 outlay on new residential construction advanced to 2.7 billion dollars, a third more than a year earlier. Other consumer durables also felt the influence of enlarged incomes, and as shown in more detail below, production in most lines was in record or near-record volumes, even though raw material shortages restricted output throughout the fourth quarter.

Large Investment in Railroads, Utilities.

Investment was again sizable even in those industries whose operations consistently failed to recover substantially during the last decade. An outstanding illustration in this respect was the railroads. After a decade of marked secular decline, the heavy industrial activity of 1941 expanded carloadings of the carriers some 16 percent over the 1940 total, with peak loading of 922,884 cars in the week ended October 18 (up 10 percent from the peak week in 1940), while passenger traffic increased almost one-fourth. Such activity improved the financial position of the roads materially. With operations already pushing toward the limit of equipment capacity, and a further increase in demand to be thrust upon them in 1942, the carriers expanded their investment outlay a third to approximately 600 million dollars for 1941 as a whole. Even this expenditure fell short of that which they sought to undertake,

for material shortages retarded the production of needed railway equipment.

Similarly, the telephone industry undertook a capital outlay of 550 millions, as compared with 400 million in 1940, while private electric-power companies made a capital expenditure of 565 million dollars. In the latter instance, new installation of generating capacity was one of the largest on record, though delivery of equipment fell behind schedule because of competing machinery demands. Here again, kilowatt-hour sales which were up 12 percent in 1941 are being further extended this year.

Heavy Inventory Accumulation.

Still another form of capital formation which increased in 1941 was the accumulation of inventories. This movement started at the outbreak of war in 1939, was interrupted only during the first half of 1940, and continued throughout the past year. For the year as a whole, the total value of all inventories increased almost one-third, or 6.1 billion dollars as valued by the reporting companies. While a considerable part of the increase is accounted for by rising prices (the whole inventory being revalued at the higher price), the additional increment of physical stocks was one of the largest of the past decade. In terms of current prices, this additional increment was valued at 2.5 billion dollars.

Especially did manufacturers' inventory increase, expanding by 3.9 billion, though stocks held by retailers and wholesalers also were enlarged considerably. Much of the advance was the normal accompaniment of a rising level of output and consumption. But forward buying also was extensive, both in anticipation of higher prices and in fear of material shortages.

The movement of incoming business reflected this forward buying in some measure. The index of manufacturers' new orders climbed to 229 (January 1939=100) in June, with buyers seeking to obtain the most

Table 3.—Gross Capital Formation, Private and Public 1929-41

(Billions of dollars)

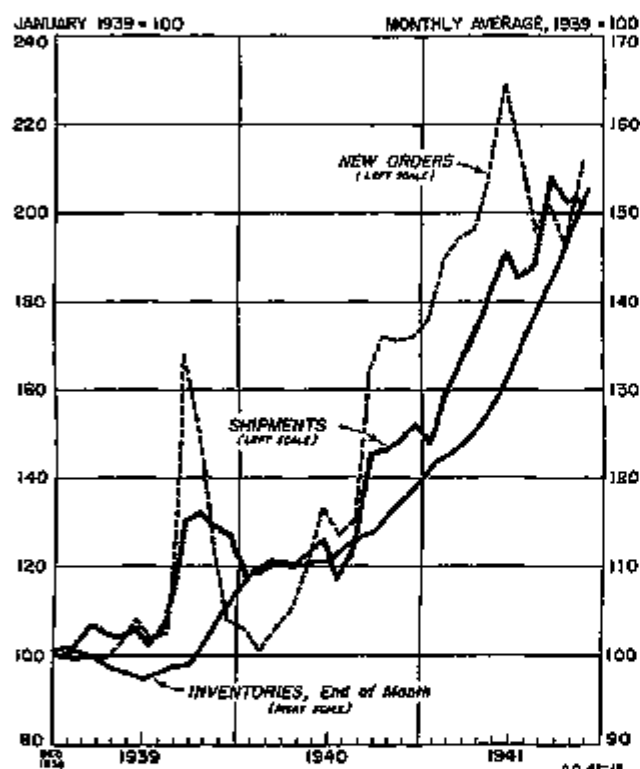
Item	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
New construction.....	10.7	8.4	5.3	3.6	2.4	3.0	3.5	5.1	5.7	5.4	6.2	7.1	10.8
Private.....	8.3	5.5	2.8	1.8	1.2	1.8	2.0	2.8	3.7	3.2	3.7	4.4	5.2
Residential (nonfarm).....	2.6	1.8	1.5	0.8	0.4	0.8	0.9	1.4	1.7	1.8	2.0	2.2	3.7
Factory and public utility.....	2.4	2.0	1.2	0.5	0.4	0.5	0.5	0.7	1.1	0.7	0.8	1.1	1.4
Other.....	2.3	1.2	1.1	0.7	0.4	0.5	0.6	0.4	0.9	0.8	0.8	1.0	1.1
Public.....	2.4	2.8	2.5	1.8	1.2	1.4	1.5	2.2	2.0	2.1	2.5	2.7	5.6
Regular.....	2.4	2.8	2.5	1.8	1.2	1.4	1.4	2.2	2.0	2.1	2.4	2.1	2.9
War emergency.....											0.1	0.6	3.4
Equipment (including war equipment).....	5.6	4.6	2.9	1.8	1.5	2.3	3.1	4.1	6.5	3.8	4.6	7.5	12.6
Total new producers' goods (including war equipment).....	16.3	13.0	9.2	5.2	4.0	5.3	6.6	9.2	11.3	9.2	10.7	14.6	23.4
Net claims against foreign countries.....	+0.4	+0.6	+0.2	+0.1	+0.2	+0.5	+0.2	-0.2	0.0	+1.0	+0.8	+1.3	+2.0
Change in inventories.....	+2.7	-1.2	-2.3	-2.0	+1.8	+0.3	+0.3	+1.4	+2.7	-0.6	+1.3	+1.8	+2.5
Total gross capital formation.....	19.4	12.4	7.1	3.3	5.8	6.1	7.1	10.4	18.9	9.4	12.8	17.7	27.9
Consumer durables (passenger cars and household goods).....	9.3	7.0	5.3	3.3	3.4	4.4	5.6	7.0	7.7	5.3	7.0	8.3	10.0
Total, including consumer durables.....	28.8	19.4	12.4	6.6	9.2	10.5	12.6	17.4	26.6	15.2	19.8	26.0	37.9

Source: U. S. Department of Commerce

rapid delivery possible; then as Government restrictions became more widespread, the index declined somewhat in the autumn months. Accumulation in manufacturers' hands took the form of raw materials and goods in process (as defined by the holder) exclusively, as manufacturers' finished goods inventory actually declined somewhat over the year.

Contrary to the experience in both 1937 and 1939, however, inventory accumulation in 1941 played a decidedly secondary role to other factors in inducing

Figure 4.—Indexes of Value of Manufacturers' New Orders, Shipments, and Inventories



Note.—The right scale (inventories) is double the left scale (new orders and shipments). The two scales were used to take into account the difference in dollar volume represented by the index number.

Source: U. S. Department of Commerce. Data for December 1941 were not available in time to include them in this chart.

the general expansion of employment and income. The significance of the movement last year lay chiefly in its influence on the amount and distribution of supplies. Inventories stocked in excess early in the year could be of later use as real consumption rose and capacity operations precluded much further expansion of raw material output. But continuation of speculative buying late in 1941 merely accentuated shortages and caused maldistribution of such raw materials as steel and the nonferrous metals. Priority and other inventory controls were directed increasingly toward eliminating this situation, though it still existed at the year end.

Increase in Export Trade Balance.

An increase in the net claim against foreign countries also helped to swell the total of gross capital

formation. Net claims were estimated to have been about 2.0 billion dollars last year, 0.7 billion higher than in 1940. As in previous years, by far the largest credit item of the Nation's balance of payments was in merchandise trade. This moved from approximately 1.4 billion dollars in 1940 to 1.8 billion in 1941.

To an increasing extent the flow of trade became an instrument of national policy. Under these conditions, both exports and imports rose within the year to the highest level since the latter twenties, but the advance in exports was the more substantial. On March 11, enactment of the first Lend-Lease Act removed the financial fetters threatening to retard shipment of armaments, raw materials, foods, and other necessary commodities to the British Empire. Exports to this area thereafter increased steadily. Movement of goods to Latin America also expanded. That region became more and more dependent on the United States for commodities formerly supplied by areas cut off by the spread of war, and this Nation made it a matter of stated policy that Latin American countries should receive materials and finished goods in a volume necessary for the smooth functioning of their economies.

In December 1940 exports totaled 315 million dollars. But by December 1941 they had advanced to 635 million and were growing rapidly. The 12-month aggregate reached 5.0 billion dollars, 28 percent above the like period in 1940.

Likewise, imports for consumption rose from 238 million in December 1940 to a peak of 281 million in May. The September volume was 265 million. Growing raw material needs in keeping with rising production, as well as stockpiling of many strategic materials before the outbreak of war, provided the impetus for this advance. Even so, the 12 months' total of 3.2 billion dollars (28 percent above a year earlier) fell short of what it would have reached had not a shortage of shipping facilities provided a serious limiting factor.

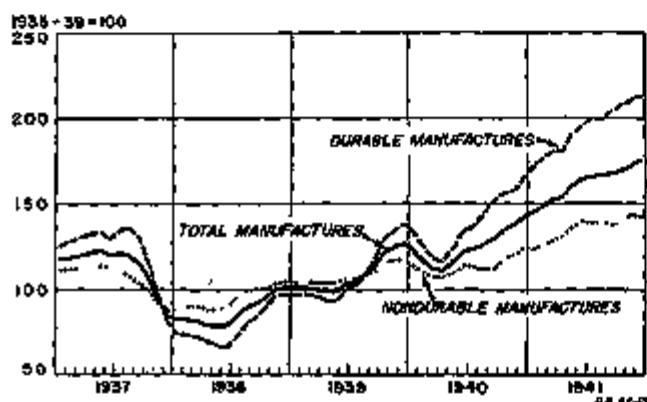
The Changing Pattern of Output and Consumption

The foregoing review of gross capital formation gives some understanding of the extraordinary stimulus to business activity provided by arms expenditure. The movement of production within the year reflected even more widely the direct effects of this stimulus as well as the indirect influence it exercised through expanding consumer income and demand. On the other hand, in sharp contrast to any other period since World War I, the influence of demand on industrial output became generally of decreasing importance, particularly after the middle of the year. Supply considerations more and more were the factors limiting the advance in production, as capacity operations were reached in key raw material lines and imports could not be further expanded.

Within the year 1941, the Federal Reserve's adjusted index of industrial production rose from 139 to 168—a record advance of more than one-fifth. As compared with the second quarter of 1940, output at the conclusion of 1941 was about half again as large. The above discussion of capital formation has suggested the rapidity of the expansion in durable goods output. The latter was augmented further by a very heavy demand for consumer durables, so that the production of durable goods as a whole rose more than a third; whereas, the production of nondurables rose at about half that rate, or one-sixth.

As shown in the more detailed discussion of production below, very significant changes took place in the pattern of output during the year. Until July, production advanced freely as slack capacity in raw material,

Figure 5.—Indexes of Production of Manufactures, Adjusted for Seasonal Variations



Source: Board of Governors of the Federal Reserve System.

machinery, and civilian consumer goods lines was taken up; new arms plants began activity, and imports of essential raw materials increased. After July, however, the pace of the industrial advance was retarded. Metal supplies could then be expanded but slowly, further increases hinging in the main on additions to capacity. Textile activity rose to the highest levels then practicable, with wool supplies limited, silk shut off, and cotton consumption almost twice the average of the last decade. Reports from other industries read similarly—either operations at plant capacity or growing inability to obtain necessary raw materials.

The Growth of Priorities.

Meanwhile, the steady expansion of arms output which followed completion of new facilities throughout the second half of 1941 further intensified many raw material shortages. Particularly in the metals was this true, since the record production of consumer durables and large capital formation (much of it directly for defense) used these materials in competition with arms manufacture.

To assure a rational distribution of any scarce mate-

rials, a priorities program had been inaugurated in the autumn of 1940. Under the administration of the Office of Production Management (as a result of legislation to that effect), the system of priorities evolved during the year from a simple procedure with limited ends, to a complicated mechanism by means of which not a small proportion of the Nation's basic resources was allocated between a variety of competing demands. This mechanism changed constantly as shortages became more extensive and administrative experience clarified the nature of the task.

At the outset, priorities certificates were issued to producers of finished arms who sought immediate delivery of necessary materials or machinery. The different types of arms themselves were even at an early date in competition with one another for such scarce items as machine tools, aluminum, and magnesium. Some order of precedence was required, and this was achieved by the granting of preference ratings to the various arms. At the same time, materials or equipment that became scarce were placed under priority control by issuance of orders regulating their distribution. Thus, priority regulations early required producers of the material or equipment in question to accept all orders for which preference certificates had been issued and to fill such orders before delivery was made on unrated orders.

As scarcities became more widespread, the materials and equipment placed under priority status expanded, the number of commodities given preference ratings increased, and the detail in which priorities governed the distribution of scarce materials was enhanced. Not only finished arms were given preference ratings, but capital equipment necessary for the efficient functioning of an armament economy was also granted such a rating—freight cars, trucks, canning machinery, steel containers, health supplies, essential housing, were examples.

Manufacturers of commodities receiving a preference rating originally obtained such a rating for each scarce material or piece of equipment placed under priority status. However, as the number of scarce materials increased, blanket ratings were issued to producers enabling them to apply for any quantity of the scarce materials they deemed necessary to their operations. Where only part of a manufacturer's activity was devoted to producing goods for which he had been granted a blanket rating, the rating applied to that fraction.

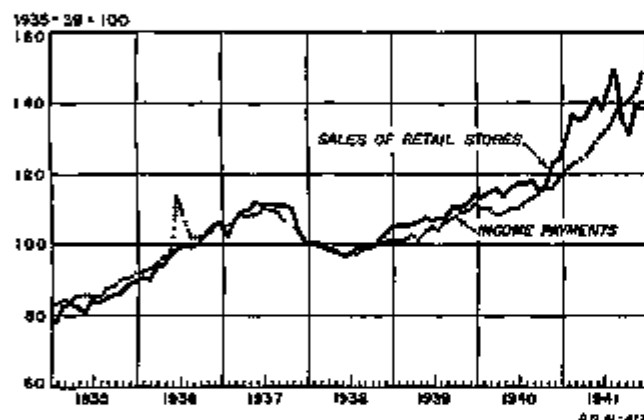
In the case of a few commodities—aluminum, certain machine tools, serve as examples—preference ratings were issued to cover the entire supply; hence, for practical purposes the material was completely allocated. But in most cases, a sizable fraction of the supply was left free to be distributed by its producers as they saw fit. Under such circumstances inventory accumulation was difficult to prevent and an equitable

distribution of materials between competing civilian industries was not realized.

This difficulty was partially overcome by two developments: in some cases the output of certain finished consumer goods was specifically limited by priority order; in other instances, the order placing a raw material under priority status provided for curtailed shipments of the material to specified civilian users.

Thus, manufacturers of electrical appliances, automobiles, silk goods, civilian woolen goods, and a number of other commodities were ordered to limit their production to a fraction of their output in a selected base period. Over the course of the second half of 1941 this fraction was steadily decreased, until in a number of cases output for civilian use was on the way to being completely eliminated.

Figure 4.—Indexes of Sales of Retail Stores and Income Payments, Adjusted for Seasonal Variations



Source: U. S. Department of Commerce

The orders placing such materials as copper, zinc, tin, lead, and rubber, under priority control limited shipments to manufacturers of specified civilian goods to a fraction of the volume they had received in a stated base period. Output of many civilian goods was automatically cut (and in some cases eliminated) by this procedure.

The priorities mechanism at the year end was still undergoing considerable revision. The proportion of the total supply of important materials for which preference ratings were granted was not always known. The use of "blanket ratings" made such knowledge impossible to obtain without a more detailed forecast of the volume of output and its raw material components. Moreover, that portion of scarce raw materials available for free distribution was not used in the most rational manner.

Gradually, however, the priorities system was working toward a complete allocation of important material supplies, not only among military uses, but also among all essential civilian needs. Such an allocation was especially necessary in respect to the metals,

for the enlarged arms program announced by the President at the start of the new year clearly would require most available metal supplies either for arms production or for essential capital formation.

Record Consumption Despite Cut at Year End.

Notwithstanding severe restrictions on the output of consumer durables toward the year end, consumption on both an absolute and a per capita basis was the highest in the Nation's history during 1941. Increased purchasing power placed in consumer hands by arms spending and heavy private capital formation led to consumer expenditures for all goods and services of approximately 74 billion dollars, whereas in 1940 the total had been about 65 billion. Some of this advance merely represented higher prices, of course. The gain in real consumption was estimated to have been nearly 10 percent. As compared with 1929, real income in 1941 had expanded almost 20 percent, and per capita income was up 11.

It has already been pointed out that the largest consumption gains occurred among consumer durables, the demand for which fluctuates most widely with changes in the level of income. Buying of most nondurables also rose in 1941, though in smaller degree, as shown in the more detailed discussion of consumption below.

For the year as a whole, the volume of consumption was in line with that which, on the basis of past relationships, should be expected, given the large income at the command of consumers. However, the movement of sales within the year deviated quite widely from the usual seasonal pattern, as consumers at certain stages undertook forward buying, then relaxed their purchasing. Thus, after a fairly normal movement throughout the first half year, a combination of the elimination of silk imports, a growing appreciation of the extent of raw material shortages, and anticipation of price advances due to Federal excise taxes and other reasons, led to extraordinarily heavy buying in the third quarter. The pick-up in sales during the fourth quarter was then smaller than usually occurs. Again in January of this year, the announced curtailment of wool for civilian use, as well as a host of other limitation orders, unleashed a flood of consumer buying for inventory which carried sales to record peaks for that month.

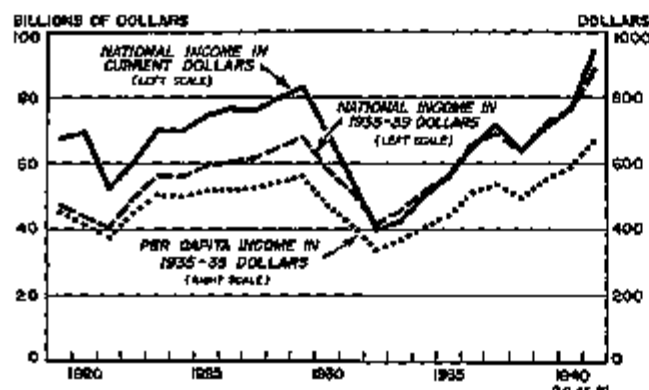
At the year end, the pattern of consumption was being altered drastically, and it was evident that the volume of goods available for purchase by consumers during 1942 would be decidedly reduced. Expenditure on all consumer durables, other than housing, in 1941 was around 10 billion dollars. With the exception of furniture and certain other selected household items—a small proportion of the total—these commodities will be produced in much smaller volume for civilian use during 1942. Fourth-quarter 1941 sales of electrical appliances and automobiles already were declining, though in part this reflected forward buying by con-

sumers in earlier months. Buying of most nondurables (with the exception of silk) continued to be heavy. With the announcement of the restriction on woolen output for civilian use and the issuing of a host of additional orders limiting production in many other civilian lines, purchasing at the first of the current year again rose to an unusual volume. Stocks were ample to meet this consumer inventory demand, but it was clear that consumption of nondurables also must decline in coming months.

The National Income

The developments set forth above are summarized most comprehensively in the movement of the national income. In 1941, the national income rose to 94.5 billion dollars (preliminary estimate) from 77 billion in 1940.

Figure 7.—National Income in Current and 1935-39 Dollars and Per Capita Income in 1935-39 Dollars



Source: U. S. Department of Commerce

As earlier suggested, about a third of the advance was the result of higher prices; in terms of 1940 prices the income for 1941 was 89 billion dollars.

On any basis the 1941 income was a record. It exceeded the previous peak of 83.4 billion dollars in 1929. In real terms, 1940 had been the previous high. However, in contrast to 1929 (for the sake of a longer term comparison at relatively high levels of activity) the aggregate real income in 1941 had risen almost one-third, while the per capita real income had advanced 20 percent.

The discussion of output has suggested that the largest gains among the various industrial components of the national income were to be expected in construction and in manufacturing. Income originating in these sectors of the economy rose 48 and 37 percent, respectively. Income originating in agriculture expanded 40 percent, but as explained below, a much larger proportion of this advance was the result of higher prices rather than increased output. Other industrial groups shared the increase, with income from mining up almost a fourth and that from transport rising a fifth. Smaller gains were evident for the utilities, finance, and service, as should be expected. On the other hand, the

war emergency brought an unusual expansion (16 percent) in the income originating in government. During 1941 this component contributed one-eighth of the total national income, only less than the 29 percent contributed by manufacturing and the 14 percent contributed by trade.

Table 4.—National Income by Industrial Division, 1940 and 1941

(Billions of dollars)			
Industrial Division	1940	1941	Percentage increase 1941 over 1940
Total national income	77.1	94.5	22.6
Agriculture	5.8	7.4	28.6
Mining	1.7	2.0	17.6
Manufacturing	20.1	27.0	37.3
Contract construction	2.3	3.7	48.0
Transportation	5.4	6.4	18.5
Power and gas	1.3	1.6	6.7
Communications	1.0	1.1	10.0
Trade	11.6	13.2	13.8
Finance	6.8	7.4	8.8
Government	10.2	11.8	15.7
Service	7.4	8.0	7.9
Miscellaneous	3.5	4.4	22.2

Source: U. S. Department of Commerce

Profits, Farm Income Up Sharply.

The income flowing to each of the functional groups cooperating in its production also increased in 1942. Corporate profits, according to tentative estimates, rose markedly with the rise in the production volume.

The profits gain was particularly impressive inasmuch as corporate taxes had been raised sharply by the Revenue Acts of 1940 and 1941. Thus, in calendar year 1941, corporation income and excess profit tax collections had doubled (as compared with 1940) to a total of 2.6 billion dollars. In fiscal year 1942, receipt of 4 billion was expected by the Treasury.

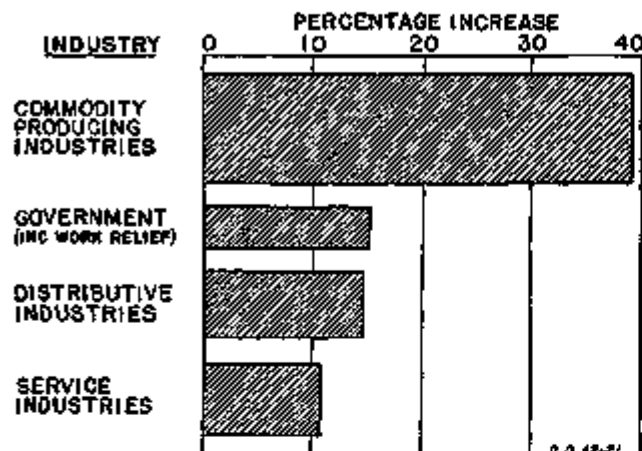
Wage rates were also increased during the final three quarters of the year, almost three-fifths of the workers in manufacturing having received an advance which averaged 3.5 percent. Coupled with more widespread employment and longer working hours this meant a sharp rise in employees' income which, in the aggregate, was offset only in part by the rise in the cost of living.

From the record of the year, it was apparent that industry as a whole operated much more efficiently (when measured in terms of unit costs) at a high level of output. Many costs change but little in the aggregate as output expands; hence, the unit cost of production declines. At the same time, of course, many prices rose. These factors, along with other economies of large scale production and larger sales volumes, resulted in the exceptional profit volume of 1941.

One aspect of interest in connection with the increased earnings was the failure of the security markets to react from their depressed state. Notwithstanding the record profits and dividend payments as heavy as had occurred since 1937, the average price of shares listed on the New York Stock Exchange was 15 percent lower in December 1941 than a year earlier, and when compared with 1937 and 1929, the year showed a

decline of about one-third and two-thirds, respectively. In the eyes of traders and investors, the uncertainties in regard to long-run business prospects more than offset the current high earnings. That considerable

Figure 8.—Percentage Increase, 1941 from 1940, in National Income by Major Sources



Note.—The width of each bar represents the percent that each major source is of the total income for 1940.

Source: U. S. Department of Commerce.

agreement existed in this regard was evident from the volume of shares traded—the smallest since the last war.

Table 5.—National Income by Distributive Shares, 1940 and 1941

(Billions of dollars)

Item	1940	1941	Percentage increase 1941 over 1940
Total national income	77.1	94.5	22.0
Total compensation of employees	52.6	64.7	23.0
Salaries and wages	46.8	53.1	24.0
Total supplements to salaries and wages	5.7	8.0	27.7
Work relief wages ¹	1.6	1.2	-25.0
Social security contributions of employers ²	1.8	1.0	-22.1
Other labor income ³	7	8	14.3
Net income of incorporated business	6.6	7.3	9.4
Dividends to stockholders, net	4.3	4.8	7.9
Business savings ⁴	1.3	2.0	100.0
Net income of unincorporated business	11.5	14.6	27.0
Agriculture	4.4	6.2	40.9
Other	7.1	8.4	18.3
Interest (net)	6.2	6.3	1.0
Net rents and royalties	2.2	2.5	13.6

¹ Includes pay rolls and maintenance of Civilian Conservation Corps enrollees and pay rolls of employees on Federal Works Program projects.

² Includes, also, contributions to Railroad Retirement and Unemployment Compensation funds.

³ Pension payments under private plans and under systems for Government employees, compensation for industrial injuries, etc.

⁴ Includes remuneration to owners for the labor and capital they contribute.

Source: U. S. Department of Commerce.

Farmers were the group actually receiving the largest income gain—an advance of two-fifths over 1940. Here again, an income that had lagged since the latter twenties topped the 1929 volume by more than a tenth. The farmer benefited especially from a government program designed to raise agricultural prices, though

his aggregate output was also up slightly (see the discussion on agriculture).

On an absolute basis, of course, the bulk of the income gain was received by employees. Aggregate salaries and wages expanded a fourth as a result of the combined influence of increased employment, higher wage rates, and longer hours. Roughly two-thirds of the higher income was paid out in the form of compensation to employees; so the proportion of the total income represented by that component remained unchanged in 1941. On the other hand, the increase in such long-term contractual incomes as interest payments and net rents and royalties was of course much smaller than with other types of income (2 percent and 14 percent, respectively); so the proportion of the total income represented by these groups declined.

Commodity Prices

The advance of Government spending and its direct and indirect effects on production and consumption exerted a profound influence on the structure of commodity prices during 1941. As shown in the foregoing review, arms expenditures produced a very general expansion of business activity. All lines moved ahead, for though the Government increased taxes very markedly, it financed more than a fifth of its total expenditures through expansion of bank credit. Moreover, the sizeable volume of private capital formation also resulted in a heavy expenditure of investment funds made available through the banking system or from accumulated balances.

The limits of this general expansion were discussed above. Suffice it to say here that in very many instances operations rose to plant capacity, and output could not be further expanded, though demand continued to increase. In other cases—particularly with imports—transport proved to be a bottleneck, and in others, scarce skilled labor was the limiting factor. The net result of these influences was an extraordinary pressure on prices. At the same time, a number of special circumstances also were operating to increase the price level. The most important of these was the Government's program in respect to farm output and prices, while still another factor was the general advance in wage rates.

Under all of these pressures, the slight price increase in the latter part of 1940 gave way in 1941 to the most general and substantial advance since the period immediately following World War I. Wholesale prices rose 17 percent from December 1940 to December 1941, while the cost of living moved up one-tenth.

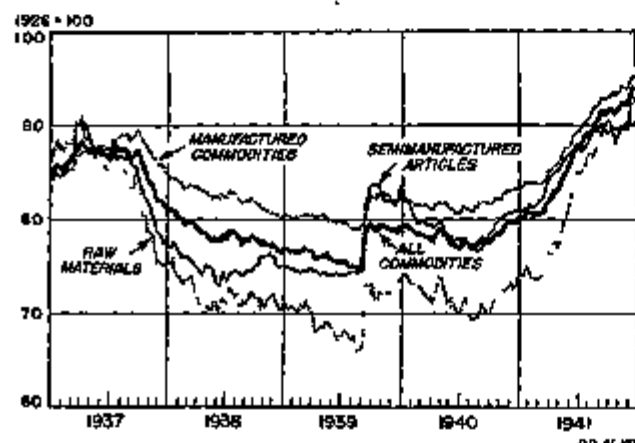
At the year end prices gave every evidence of continuing their advance, though the Government sought to counter the movement by strengthening materially its intervention. Widespread ceilings were being placed on commodity prices; where possible, plant capacity

was being expanded; scarce raw materials and consumer goods were being directly rationed; and consumer purchasing power was to be cut by means of increased taxation.

Price Movement Prior to 1941.

The recent price changes need to be viewed in the light of the movement prior to 1941. At the outbreak of war in 1939 the price indexes had recovered about one-half of the decline of the post-1929 deflation. On the average, prices stood approximately one-fifth under the 1929 level. Most of the rise subsequent to 1933 had accompanied the business upswing which terminated in the latter part of 1937. From 1937 through 1940 price changes had not been considerable, with the exception of a brief but intensive market reaction to the outbreak of war in September 1939. At that

Figure 9.—Indexes of Weekly Wholesale Prices



Source: U. S. Department of Labor

time a flurry of speculative inventory buying pushed the over-all price indexes up, but the basic underlying demand was not present to support the level of industrial activity then prevailing, and prices fell along with reduced output.

The subsequent decline was not large but continued until mid-August of 1940, even though output began again to advance after April of that year. In the half year from August 1940 through February 1941, wholesale prices rose 4 percent and the cost of living changed not at all. Indeed, as contrasted with a year earlier, wholesale prices in February 1941 were up 2 percent, the cost of living 1 percent, while industrial production had increased by the very large amount of one-fifth.

This price behavior was a unique performance, particularly when contrasted with other periods of much smaller industrial expansion during the thirties. It was possible for several reasons. Chief among these was the huge slack in the raw material and industrial plant of the Nation. A general advance in output could occur without encroaching on capacity limits save in few instances. Hence, as wage rates remained stable, unit costs declined with the expansion of production.

Moreover, the Government sought and successfully obtained the cooperation of large raw material producers—especially the producers of metals—in stabilizing the prices of their key commodities.

However, even in this relatively quiet period certain exceptions were apparent. Farm and related food prices, and the prices of certain building materials were the principal cases. Farm prices advanced 7 percent between August 1940 and February 1941, and prices of building materials rose 6 percent. The latter movement was caused by the extraordinary demand from military construction (especially Army camps) impinging on raw-material supplies whose output could not be stepped up immediately.

The rise in farm prices was not unusual. These prices fluctuate more widely with changes in the level of income than do those of most industrial commodities. Relative to the latter, farm prices were low in mid-1940, and their upward movement represented a partial correction of this disparity.

General Price Advance Begins in Early 1941.

The specialized character of the price rise in the latter part of 1940 gave way to a more general advance early in 1941. From mid-February through August, both wholesale and retail quotations rose steadily, surpassing the high points of 1937. Though the pace of the increase was retarded somewhat in the autumn months, it proceeded with renewed momentum at the end of the year. By that time wholesale prices had climbed 16 percent, while the cost of living had moved up one-tenth.

The advance was as broad as it was persistent. Every major group of commodities in the Bureau of Labor Statistics' index of wholesale prices contributed in some degree to the rise. Farm products again registered the largest increase, with an average advance of 37 percent. Likewise, foods and textiles, both closely related to farm products, rose 23 and 21 percent, respectively. On the other hand, the metals and metal products, fuel and lighting materials, chemicals and allied products, and building materials, especially cement, all recorded a much smaller rise.

In general the indexes representing the components of the Bureau of Labor Statistics over-all index of wholesale prices tended to draw closer together. (See Fig. 9.) Such a development pointed to a relationship between the various price groups similar to that which existed in the base year, 1926, as well as for a short time during the middle of 1937. This tendency of prices to "cluster" toward the end of 1941 was due largely to the rapidity in the advance of agricultural prices which had previously been unusually low relative to other prices when compared with earlier periods of high activity. Parity as officially defined was attained in September, and thereafter agricultural prices fluctuated slightly under it.

At the beginning of 1941, the prices of farm products were 11 percent and food prices nearly 9 percent below the average price level, while the prices of fruits and vegetables were 26 percent below. By the end of December, however, deviations from the average were very small. The prices of farm products were 1 percent above and food prices only 3 percent below the average price level. The prices of fruits and vegetables rose in a smaller degree, however, being 21 percent below the average. While the prices of all commodities other than farm products were 2 percent, and the prices of manufactured products were 3 percent, above the average level at the beginning of the year, by the close of the year those prices were approximately equal to the average. Partly as a result of the advance in farm quotations, raw material prices, which were 8 percent under the average at the start of the year, ended the year only 1 percent below.

The fact that the relationship existing between various price groups at the end of 1941 was similar to that in certain selected past years was not in itself significant. Nevertheless, the relative extent of the advance in the various groups indicated the complexity of the forces underlying the upward movement.

Higher Living Costs.

The advance in wholesale prices was reflected in the increased cost of living, though here again all major components contributed to the rise. Both the cost of food and of housefurnishings advanced 16 percent, while clothing prices rose 13 percent. Even the slow-moving rent, fuel, and electricity items jumped 3 and 4 percent in the course of the year. Living costs climbed most rapidly in the larger cities, but the general nature

of the upward movement was evident from the fact that small towns in nondefense areas likewise reported higher costs.

Farm Program, Shipping Shortage Raise Raw Material Prices.

As suggested above the reasons for the radical change in the price outlook are complex. Underlying the whole movement, of course, was the tremendous upsurge of demand in all markets, generated in the first instance by the huge Treasury outlays for military purposes, but strongly supported by heavy consumer expenditures and private capital outlay for inventory and plant. No longer was the slack in raw material and industrial plant sufficient to absorb such a demand, and the resulting shortages, extending to all sectors of the economy, made it possible for prices to advance.

Subsidiary to this broad underlying cause were other factors which also were of considerable importance. Chief among these were the Government's farm program, directed at elevating agricultural prices, the growing shortage of shipping, and the marked increase in wage rates after the first quarter of the year.

The farm program calls for special comment here, though it is more fully discussed in the section on agriculture. In April the Government announced that it would seek to increase the output of a number of commodities needed for export abroad by means of raising their prices. This policy was to be implemented through direct purchases in regular commodity markets. In ensuing weeks, the prices of pork, lard, eggs, certain canned vegetables and fruits, manufactured dairy products—to name some of the more important—all increased materially. (See table 7 for illustrations)

Table 6.—Wholesale and Other Price Indexes for Selected Periods

Item	Apr 1937	Aug 1939	Jan 1940	Aug 1940	Jan 1941	Dec 1941	Percent change		
							Aug 1939- Aug 1940	Aug 1940- Jan 1941	Jan 1941- Dec 1941
WHOLESALE PRICE INDEXES									
Combined index, all commodities ¹	88.8	75.0	79.4	77.4	80.9	83.0	+3.2	+4.1	+16.8
Economic classes									
Raw materials	88.7	68.5	73.8	68.8	74.0	82.3	+5.0	+6.9	+23.7
Manufactured articles	89.5	74.5	81.7	77.0	81.3	90.1	+3.4	+8.0	+10.8
Manufactured products	87.4	79.1	81.7	81.0	83.5	94.6	+2.4	+3.1	+13.3
Farm products	93.2	81.0	85.1	85.0	71.6	94.7	+4.1	+9.1	+32.3
Grains	119.2	51.5	73.5	69.8	87.6	91.0	+15.1	+11.0	+34.0
Livestock and poultry	93.0	65.0	87.2	71.8	83.0	97.4	+8.2	+10.1	+17.3
All commodities other than farm products	85.9	77.0	81.5	79.9	82.7	93.3	+2.4	+3.5	+12.8
Food	86.5	67.2	71.7	70.1	73.7	90.5	+4.3	+5.1	+22.8
Dairy products	78.9	67.9	81.9	74.3	80.2	95.5	+6.4	+7.9	+19.1
Meats	94.0	73.7	80.0	76.1	83.2	95.3	+3.3	+6.5	+14.5
All commodities other than farm products and food	86.5	80.1	83.4	82.0	84.3	98.7	+4.4	+4.8	+11.2
Building materials	96.7	80.0	83.4	83.3	89.0	107.5	+4.1	+6.8	+8.2
Chemicals and drugs	85.0	74.2	77.7	76.7	78.0	91.8	+3.4	+2.5	+16.2
Fuel and lighting materials	75.8	72.0	72.7	71.1	72.1	78.4	+2.1	+1.4	+8.7
Rides and leather products	105.3	92.7	108.6	96.9	102.4	114.8	+4.8	+5.7	+12.1
Hides and skins	121.4	77.2	102.0	77.1	90.1	125.9	+1.1	+28.5	+17.0
WHOLESALE PRICE INDEXES—Continued									
All commodities other than farm prod. and food—Con.									
Textile products	79.5	67.8	77.9	72.3	75.2	91.5	+6.0	+4.0	+22.1
Cotton goods	82.1	65.3	75.4	68.6	75.8	107.5	+4.7	+10.5	+41.6
Rayon	33.6	38.6	39.5	39.5	39.5	39.5	+3.5	0.0	+2.7
Silk	34.4	44.3	61.8	48.0	42.8	75.0	+2.9	-1.2	+26.7
Woolens and worsteds	93.6	75.5	90.4	83.7	89.2	107.7	+10.9	+4.6	+16.1
Metals and metal products	95.5	83.2	95.8	94.0	97.7	103.8	+1.8	+3.0	+5.7
Iron and steel	99.6	95.1	98.3	94.8	95.7	97.0	-3.1	+9.9	+1.4
Nonferrous metals	97.0	74.6	82.6	79.1	83.6	94.6	+6.0	+5.7	+11.4
House-furnishing goods	89.0	86.6	87.9	88.5	89.0	100.1	+2.4	+0.0	+13.6
Miscellaneous	81.1	73.3	77.7	76.7	77.1	87.5	+4.8	+0.5	+13.6
OTHER INDEXES									
Cost of living, (1935-39=100)	102.1	98.6	96.5	100.0	100.0	110.5	+1.4	+1.8	+6.6
Retail foods, (1935-39=100)	105.1	93.5	94.8	96.3	97.8	113.1	+3.0	+1.6	+15.6
Retail prices of department store articles (Dec 31, 1939=100)	95.2	89.5	92.3	92.9	94.2	108.3	+3.8	+1.4	+15.0
Prices received by farmers (Aug 1909-July 1914=100)	130	88	90	95	104	143	+9.2	+8.8	+37.6

¹ Based on 734 series in 1937, 813 in 1939, 863 in January and August 1940, and 889 in 1941.

² No quotation.

Sources: Wholesale and retail food prices and cost of living, U. S. Department of Labor; retail prices of department store articles, Fairchild Publications; prices received by farmers, U. S. Department of Agriculture.

In the case of certain commodities, such as the dairy products, the Government announced a minimum price of 85 percent of parity. Though this level was substantially above the majority of such quotations as they existed in the early part of the year, many prices soon moved ahead of it.

Prices of basic agricultural staples like cotton, wheat, tobacco, and corn, some of which were in excess supply, also rose as a result of Government action. In these cases, the Government loan rate (which places a floor on prices) was advanced to 85 percent of parity; whereas, previously it had been 56 percent for cotton and wheat and 75 percent for corn and tobacco. Prices of these commodities climbed above the loan rate, however. Speculative activity produced part of the increase, for action on the legislation to control prices strongly suggested that loan rates would be advanced still further.

Import prices constituted another group that moved up rapidly in the early weeks of the year for somewhat special reasons. Increased industrial output required a much heavier import of raw materials. But as

Table 7.—Wholesale Prices of Selected Commodities

Item	1941				Percent change	
	Jan 7	Aug 19	Oct 14	Dec 30	Aug 19 from Jan 7	Dec 30 from Jan 7
Coffee, Santos, No. 4, New York						
cents per lb.	7.5	13.4	13.1	13.4	+78.7	+78.7
Potatoes, white, Chicago	1.25	1.68	1.35	2.20	+34.4	+76.0
Cotton, 10 market average	10.12	15.39	16.79	17.48	+56.9	+72.7
Peaches, canned, No. 2 1/2, California						
dol per doz.	1.18	1.88	1.85	1.88	+57.6	+62.1
Hogs, light butchers, Chicago	7.45	11.65	10.78	11.33	+57.1	+54.1
Eggs, fresh first, Chicago	21.5	20.5	30.4	35	+23.2	+63.4
Blankets, cotton, 70x80, 2 1/2 lbs to pair						
cents per pair	89	119	126	129	+43.7	+44.9
Shirts, 44 by 64 count, 81 by 99-inch						
dol per doz.	8.687	11.373	12.477	12.377	+43.8	+42.3
Shirts, men's work, blue chambray						
cents per shirt	80	76	81	85	+4.5	+4.7
Wheat, No. 2, hard, Kansas City						
cents per bu.	85.0	107.1	112.6	123.5	+44.3	+44.3
Flour, Standard patents, Minneapolis						
dol per bbl	4.75	5.80	5.78	6.25	+31.6	+31.6
Corn, No. 3, yellow, Chicago						
cents per bu.	65.1	73.8	60.4	79.1	+21.6	+21.6
Sugar, 96° delivered, duty paid						
cents per lb.	2.9	2.7	3.1	3.6	+27.0	+27.0
Hides, heavy native steers, Chicago						
cents per lb.	13	15	15.4	16.4	+26.2	+26.2
Suits, men's blue serge, 16 oz, 4 pieces						
dol per suit	19.00	21.20	22.25	22.35	+16.3	+17.1
Paper, mill, book	6.30	7.30	7.30	7.30	+16.9	+16.9
Electric refrigerators, 4 to 7 cu. ft.						
dol per unit	84.98	89.41	93.39	95.94	+12.8	+12.8
Bituminous coal	77.07	83.13	83.13	88.13	+14.3	+14.3
Bituminous coal, mine run	4.89	4.88	4.88	4.70	-3.7	-3.7
Trucks, small, 3 1/2 to 5 1/2 ton	904.25	921.31	954.93	954.93	+6.7	+6.7
Rugs, Axminster, 9x12	26.59	26.29	28.29	28.29	+6.7	+6.7
Shoes, men's black calf, oxford						
dol per pair	4.25	4.38	4.35	4.40	+4.2	+4.2
Wool, territory, fine, Boston	1.10	1.08	1.10	1.14	+3.6	+3.6
Copper, electrolytic, New York						
cents per lb.	12	12	12	12	0.0	0.0
Cattle, steers, Chicago	12.25	11.88	11.38	12.53	+2.8	+2.8
Steel scrap, Chicago	20.75	18.75	18.75	18.75	-9.8	-9.8

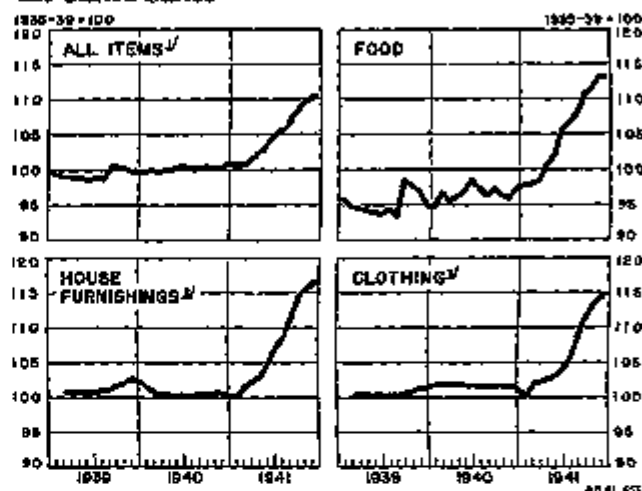
Source: U. S. Department of Labor.

explained in detail in the shipping section, the facilities for moving goods from abroad into this country grew tight after the first quarter. Moreover, since this development could be anticipated, speculative activity in the principal commodity markets pushed prices

ahead rapidly. The import component of the Bureau of Labor Statistics' index of 28 basic commodities stood at 122 at the outset of February; 2 months later it reached 144 and by August it had climbed to 160. Direct control of the principal commodities by the Government largely arrested the movement thereafter.

On the other hand, certain very important raw materials—in particular the metals—moved very little

Figure 10.—Indexes of Cost of Goods Purchased by Wage Earners and Lower-Salaried Workers for Large Cities in the United States



¹ Includes some items not shown separately in this chart.

² Data through September 1940 are for the last month of each quarter and monthly thereafter.

Source: U. S. Department of Labor.

in price during 1941, at least insofar as published quotations reveal such price shifts. Steel ingots and copper changed not at all (save for the price of a small quantity of copper mined as marginal output), while zinc and lead quotations were marked up only after the beginning of the current year. Aluminum and magnesium prices declined, as costs were lowered with increased output. Bituminous coal prices rose 8 percent, partly as a result of higher wages throughout the industry.

Of course, realized prices charged by some metals producers probably were higher in 1941 as discounts and customer differentials were modified or abolished. Nevertheless, the efforts of the Office of Price Administration created a radically different price situation in respect to these basic materials than had existed in other periods of rising industrial activity.

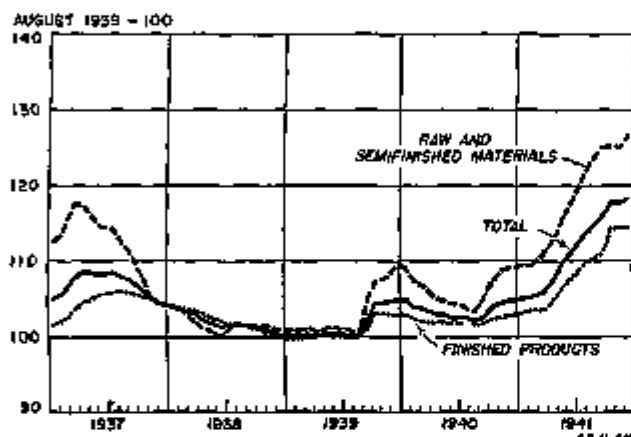
Despite the comparative stability of metals prices, however, the raw materials component of the Bureau of Labor Statistics' wholesale price index rose 24 percent within 1941, chiefly reflecting increased agricultural and import prices. Other cost changes supplemented this advance. Approximately three-fifths of the labor engaged in manufacturing received a wage increase within the course of the year which averaged 8 percent. In many cases these higher wages were more than compensated by reduced unit costs stemming from economies incident to an enlarged output. Neverthe-

less, they were sometimes passed on—if not entirely, at least in part—in the form of higher prices.

In retail markets, moreover, heavy Federal excise taxes on a number of commodities, particularly consumer durables, were also passed on as additions to prices.

The results of these various influences are depicted in tables 6 and 7. The former reveals the price movement for various broad commodity groups, while the latter gives the detail for selected goods. An appreciation of the variety of commodities affected and the wide range of the price advance is to be ob-

Figure 11.—Indexes of Wholesale Prices of Industrial Commodities



tained not only from these tables, but also from the accompanying charts.

The Growth of Governmental Price Control.

The Government sought in some measure to manage and control the advance in prices from its inception, a policy quite different from that in World War I.

Thus, as early as May 29, 1940, the President by Executive order appointed a Price Stabilization Commissioner. Though the powers of the commissioner were very limited, it was his duty to attempt to prevent any price advance for strategic commodities, especially those affected by the war program and vital to it. Activity at first was concentrated on the metals, and the prices of these were stabilized for the most part through informal agreements with producers.

However, as shortages appeared in a number of other lines, with a consequent threat of rising prices, a simple procedure of this character was not always possible. Particularly where dealers were numerous, informal action proved to be unavailing. There then was adopted a practice of issuing formal price schedules, placing a stated ceiling on the commodity prices in question.

The first of these schedules, issued February 17, 1941, covered the prices of second-hand machine tools.

This initial schedule was followed in March and April by others listing maximum prices for aluminum scrap and zinc scrap, the prices of which had moved above those of the virgin metal itself.

The sanctions available to the Price Commissioner were vague and rested for the most part on the power of public opinion. As the price advance had become more generalized by April, the President sought to increase governmental control through creation of the Office of Price Administration and Civilian Supply. This organization expanded rapidly, but functioned along lines very similar to those developed by its predecessor. While the power to enforce price ceilings theoretically was strengthened materially, in actual practice the added sanctions (such as that of withholding raw materials from a producer) were impossible to administer in detail. For this reason, the Price Commissioner continued to rely principally on voluntary cooperation from producers.

Again, the general procedure was, if possible, to freeze the price of a commodity through obtaining agreement from the firms within an industry not to mark up quotations beyond levels prevailing on a specified date. In some cases, acceptance of the agreement involved rescinding a price advance which already had occurred. Where this first step was not successful or feasible, a formal price schedule was issued. Such price schedules sought to take into account costs, profits, the organization of the market, and all other data relevant to the determination of a fair price. Twelve such schedules were issued through July, during August, 13 were added; and by the year end the total had reached 64. Many of these schedules merely formalized what had been informal agreements.

A wide range of commodities were covered by price schedules at the end of the year. However, for the most part these fell in a relatively few principal groups, as follows:

Type of commodity	Number of schedules
Metals and metal products.....	14
Textiles and textile raw materials.....	13
Chemicals.....	8
Lumber, lumber products, and building materials.....	7
Imported foods.....	5
Paperboard, scrap paper, and rags.....	3
Hides and leather.....	2
Fats and oils.....	2
Total.....	64

¹ The remaining 10 schedules include: second hand machine tools, 2 for coal which were revoked, Pennsylvania grade crude oil, coke, flashlights, reclaimed rubber, cigarettes, new tires and tubes, and domestic cooking and heating stoves.

Most of the schedules applied to raw materials (including used or scrap materials), machinery, and other capital goods essential to the war effort. Only 7 out of the total of 64 were concerned with consumer goods, and of these the only maximum retail prices

established were those for flashlights, and rubber tires and tubes.

Actually a much larger segment of the economy had been subjected to price control by the close of the year than the number of schedules might imply. The 62 schedules which were in effect by the end of the year covered approximately 19 percent of the value of all commodities in terms of wholesale prices. In addition to formal price schedules, the Office of Price Administration had negotiated 81 voluntary price agreements, and had issued 108 freeze letters and fair price lists. These informal price regulations (not always effective) covered 30 percent of the wholesale value of commodities.

In the main, the schedules were designed to restrain prices from rising above levels which already had been attained. For comparatively few cases were prices set at a level very much lower than that existing at the time the schedule was issued. The schedules were subject to amendment, and where this occurred it often took the form of an upward revision. Moreover, those schedules applying to cotton yarn and textiles which used cotton established a ceiling price that varied directly with changes in the spot quotations for the raw material. Of course, the price of cotton, like those of most other agricultural commodities, was not subject to restraint. Rather, as pointed out above, the Government sought to raise farm prices.

The Price Control Act of 1942.

The Government achieved only a limited success in implementing its control of prices, even in those areas in which it concentrated. To attain widespread compliance with the limited authority under which it operated was especially difficult. For this reason, the Executive sought wider price-control powers from the Legislature. Though a bill to this end was introduced into Congress late in July 1941, it only became law, after extensive debate, late in January of this year.

The Emergency Price Control Act of 1942, made legally enforceable through civil or criminal court action, authorizes the Price Administrator to establish ceiling prices for any commodity and ceiling rents for housing accommodations within defense areas. Agricultural commodities are afforded special treatment in that minimum prices are designated below which no ceiling price may be established, and in that no action may be taken by the Administrator without prior approval of the Secretary of Agriculture. For determining the minimum ceiling price of agricultural commodities, the highest of four alternative prices may be adopted: a price equal to 110 percent of parity; the average price from July 1, 1919, to June 30, 1929; the price on October 1, 1941; or the price on December 15, 1941.

In addition to issuing formal price schedules the Administrator may enter into voluntary agreements

with representatives of industry. He may issue orders regulating or prohibiting speculation and hoarding in connection with any commodity. To prevent price control from interfering with production, the Administrator is empowered to establish differential prices for the benefit of high cost producers and to buy or sell commodities provided that ceiling prices are not violated. Only agricultural commodities acquired under provisions of this Act may not be sold at less than ceiling prices.

For simplicity and effectiveness of administration, a license may be required as a condition for selling a commodity. If the Administrator has evidence of the continued violation of any order, regulation, or price schedule which he may have issued, he may apply to a court for the suspension of the license. Thus, not only may a violator of the Act be prosecuted through civil or criminal proceedings, but he may also be prevented from selling the commodity for a limited period of time.

There is a check imposed upon the power of the Administrator and his decisions are not necessarily final. An Emergency Court of Appeals is created to review complaints which individuals may raise regarding the administration of the Act. If this court decides orders or price schedules are arbitrary or unfair, it is given the power to set them aside.

Despite the powers given the Administrator, it is clear that the Act can at most slow the rate at which the general price level is rising. Prices which the Administrator does not control may rise without limit. Most agricultural commodities have not yet reached the minimum ceiling prices, and the ceilings will automatically increase as the things which farmers buy rise in price. The cost of living will undoubtedly continue to rise, as stocks of goods on hand are exhausted, until it has caught up with wholesale prices; for the Administrator is directed to consider costs in establishing ceiling prices.

In addition to these factors, moreover, the underlying pressure on prices contributed by a steadily expanding monetary demand shows no indication of being relaxed throughout the coming year. Arms outlay is to be increased at a rapid pace; and while taxation is to be stepped up somewhat, the President's Budget Message suggested that the addition to the debt in fiscal year 1943 would be in the neighborhood of \$5 billion dollars.

Ordinarily, a debt increment of this size would produce some inflation. The use of price ceilings, combined with extensive rationing of raw materials and finished goods to both producers and consumers, will do much to mitigate the monetary pressure, however. For in many cases consumers will find themselves forced to increase their savings through inability to obtain commodities they wish.

Industrial Production

Industrial production in 1941 was larger than in any previous year of the Nation's history. The Federal Reserve index began the year at 139 and rose to 168 by December, with an average for the year of 156, a fourth more than in 1940 (the previous peak) and 42 percent above the 1929 level. Expansion was maintained at a rapid rate for the first 3 quarters of the year, but despite an ever-growing demand, shortages of key raw materials curtailed the pace of the advance very markedly in the final months.

As suggested above, industrial developments at the first of the year were influenced both by the armament program of the Government and by the high level of consumer income it generated. After midyear, however, the former influence emerged dominant, and at the start of 1942 American industry was on the road to full enlistment in the world's armed struggle.

Such a process required vast changes in the pattern and flow of production. These were begun in 1940 and continued in 1941. The greatest shift, however, is to be undertaken during the current year. In the 18 months following the fall of France, the capacity for producing arms as well as arms output itself was increased very greatly. At the same time, ground was being prepared slowly for the titanic objectives of 1942 and 1943.

However, additions to arms capacity during 1941 were almost exclusively in the form of new plant rather than the conversion of existing facilities. This plant—an outlay of 2 billion dollars for armament facilities, 1 billion on supporting raw material and machinery capacity, plus close to another billion for civilian consumer lines—formed a prominent part of the record capital formation carried out within the year.

The arms output, with its resultant large volume of capital formation, was instrumental in carrying consumer purchasing power to peak levels. Increased demand on the part of individuals was directed in particular toward the consumer durables, with the result that output of these was extraordinarily heavy, even in relation to the income flow, during the first 3 quarters of the year. It was in the final months that the raw-material shortages forced output of these items to be curtailed; by the start of 1942 the new military program pointed to the impending elimination of virtually all such production through stoppage of materials for such use and the conversion of whole industries to war production.

Such a development will not reverse the trend toward a larger proportion of output in the form of durable goods, for which the complex requirements of a modern fighting machine create an insatiable demand. In 1929, the index of durable-goods production (1935-39=100) stood 42 percent above the nondurable index. In 1937,

the peak year of the thirties, the margin of excess had been cut to 15 percent; but in 1941, the durable-goods index was almost half again as high as that of the nondurables. The separation of the two will be further increased during the current year.

The production of nondurables was one-fifth larger in 1941 than a year earlier—a very considerable expansion for this type of output. The high consumer income was mainly responsible for the advance, though purchases of nondurables for military and business use were also increased.

The War Industries

The most dramatic advance in output during the year appeared in certain industries engaged directly in turning out finished arms. In the first stages of the armament program, emphasis was on planes and ships as the most urgently needed types of war material, and it was in these arms categories that heaviest volume production was achieved by the year end.

Output of planes averaged more than 1,500 monthly (using only 9-month figures) compared with the 500 units per month average in the preceding year. In September, the last month in which data on deliveries were public, output had risen to 1,914 planes, compared to 1,016 in January. It should be remembered that in the latter part of the year production included proportionately more heavy combat planes and fewer trainers.

Deliveries of ships also rose markedly, though not so much as in the case of aircraft. The number of naval ships completed during the year is not published, but deliveries of merchant tonnage, aggregating 749,000 gross tons, were less than twice the 1940 completion of 445,000 gross tons. However, the Federal Reserve index of shipbuilding production (1935-39=100) advanced to 736 in December 1941 from 263 a year earlier, a somewhat larger increase than that in aircraft (535 to 1,438 in the same period). Because of the relatively long production period which prevents shipbuilding production effort from being immediately reflected in deliveries of finished ships, the index is a better measure of the expansion of activity. In addition, shipyards had a heavy volume of repair and conversion work.

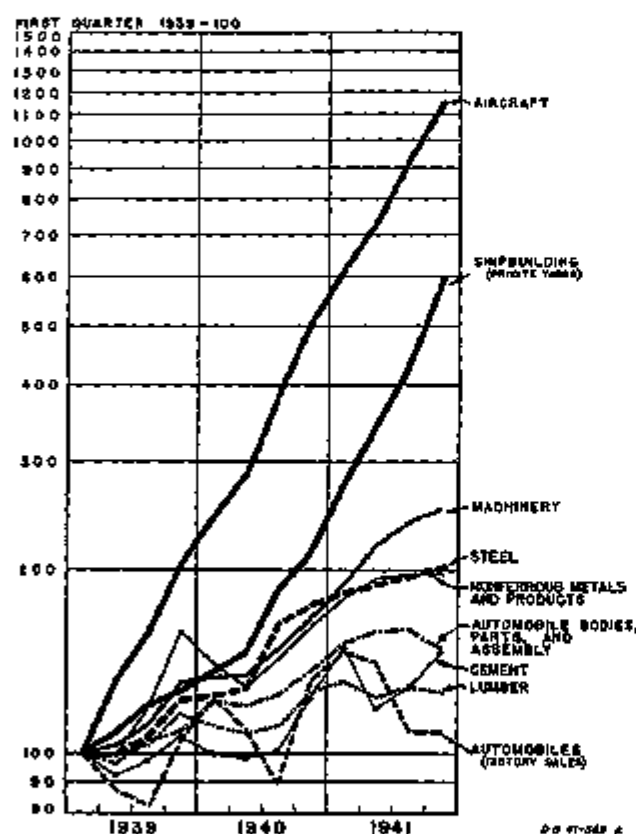
In both of these basic war industries, plant was in the process of being multiplied manifold. At the end of November, contracts totaling 935 million dollars had been let for new aircraft facilities, and 800 million for shipbuilding with actual capital outlays during the year about half these amounts. Moreover, the new armament program announced at the outset of 1942 provided for a further large expansion of facilities. Previous to this, appropriations for planes and ships had totaled 18 billion dollars and 12 billion, respectively.

New aircraft capacity was of two main types. First, established frame and engine builders added to their

facilities, doubling manufacturing floor space within the industry during the year. Second, the automobile industry entered the business on a large scale.

In 1940, the automobile industry had accepted contracts for a considerable engine-manufacturing program, and the liquid-cooled Allison was already in quantity production by the General Motors firm. In 1941, plans for participation by automobile manufacturers were stepped up considerably, especially with respect to the airframes. Two noteworthy examples are the construction of the Ford bomber and parts plant, the largest in the world, and of four large bomber assembly plants

Figure 12.—Indexes of Output of Selected Durable-Goods Manufacturing Industries, Adjusted for Seasonal Variations



Source: Indexes computed with first quarter, 1933 as base from data published by the Board of Governors of the Federal Reserve System. The December figure for Cement, included in the fourth quarter of 1941, was estimated by the U. S. Department of Commerce.

in the mid-West (not entirely completed at the year end) to be operated by well-known plane manufacturers, and supplied with sub-assemblies, parts, and engines in large part by automobile companies. The automobile companies generally built new plants for this purpose (most of which were not yet in complete operation at year end), using their management and engineering personnel, but not converting existing machinery.

In developing shipbuilding capacity, on the other hand, the Maritime Commission followed an announced

policy of utilizing chiefly managements which were experienced in ship construction. Contracts were spread to as many yards as possible, in contrast to such centralized projects as the Hog Island yard of the last war. At year end there were 40 private yards with 275 ways capable of building large oceangoing vessels, compared with 18 yards and 70 ways 12 months earlier. Expansion of Navy yards was also rapid, but a large part of the fighting ships were to be built as heretofore on private ways.

The heavy volume of output, compared with past years, called for new and more rapid production methods; both industries had normally operated on a semi-custom basis. Various modifications of the assembly line were adopted. In aircraft manufacture, automatic machinery and extensive jiggling became the rule, while in shipbuilding riveting was replaced by welding in many operations. These and many other developments added up to what was almost a technical revolution. Output, for example, was greatly speeded. In the case of shipbuilding, time elapsed between keel laying and delivery was in some cases as little as one-half that required in World War I.

Following the attack of Germany upon Russia, the arms program was sharply modified to include larger amounts of heavy land equipment, infantry arms, and ammunition. Appropriations for these items aggregated 16.5 billion dollars at year end, or approximately one-fifth of the total program at that time.

Since American industry originally had but small facilities for production of this type (Government arsenals being the chief providers), very large expenditures for new plant were necessary. Approximately 2 billion dollars of contracts for new facilities had been placed by the end of November (see tables 1 and 2), and actual capital outlays of nearly half this amount were made during the year.

For the most part, managements were called in from related industries to operate the new facilities. Production of primarily metal goods was given to the durable-goods industries, especially railroad equipment and automobile companies, while chemical firms took charge of explosives manufacture. Except in the case of certain vehicles and tanks, the new facilities were built with Government funds, primarily, and remained in Government ownership.

Industrial Equipment.

As pointed out above, creation of the new complex of war industries required unprecedented amounts of machinery and related equipment, total expenditures for which (including replacements) are estimated to have been close to half again as large as the 1940 total of 5.6 billion dollars. Activity in the various industries comprising the machinery group showed a sharp

increase, the index averaging 209 in 1941, a 55-percent advance over 1940's 135.¹

The nature of modern war weapons—primarily close-tolerance metal manufactures—placed an especially heavy burden on the producers of machine tools. The depression had severely disrupted this industry, which now faced the additional problem that the types of tools needed by war industries were in many cases not those it had been accustomed to making in large numbers. An increase in production of about 78 percent, from 280 million to 452 million, had been achieved from 1939 to 1940, and in 1941 a further increase of 68 percent brought annual output close to about 775 million dollars. A part of the increase was obtained by extensive subcontracting. However, requirements for tools were of such huge proportions that tool manufacture was undoubtedly the one bottleneck most seriously restricting arms output and expansion of arms capacity during 1941. In coming months the disparity between new tools output and requirements will remain great even though the War Production Board aims at a 2-billion-dollar output of new tools in 1942. Hence further additions to arms capacity must come in considerable part from conversion of existing manufacturing facilities to war production.

Another important machinery industry, the manufacture of farm equipment, had a record year. The industry was granted a favorable priority status for raw materials, and in the last 3 quarters of the year output was at an unprecedented level, roughly 65 million dollars per month, bringing the 12 months' average to 62 million, compared with the previous record of 50.6 million in 1929. In December, the first month of output under a new allocation order that would hold 1942 output to an average of somewhat less than 40 million dollars per month, production fell to 63 million.

Output of railroad cars, another major type of equipment, was hampered during much of 1941 by shortage of materials, especially steel plates. Although requirements were critical, and order backlogs were large (30,000 cars in August), production was only 65,317 cars (not including output of private car shops), about one-third more than in 1940 but far short of needs. Approximately 993 locomotives were built, compared with 646 in 1940, with output tending towards Diesel and Diesel-electric units.

¹ It should be remembered that some direct war manufactures is included in the index. Production of aircraft engines is classified as a machinery industry, and the steady rise in productive activity by such nonwar groups as typewriters, textile machinery, and electrical appliances (also in the index) suggests that a part of their production was on war contracts, since after the midyear it became difficult to obtain materials for nonessential manufacture. Machinery industries are among the most readily convertible to war production.

Raw Materials

One of the most significant developments of the year was the change in the pattern of raw material requirements. The tremendous upsurge of durable goods production for both civilian and military use placed upon metals industries an extraordinary demand. This demand they were unable to fulfill completely, with the result that priority control over existing metal supplies was undertaken in varying degree throughout 1941.

Chemicals were still another type of raw material which faced an enormous expansion of demand, both military and civilian. Supply of other materials that were largely imports, like rubber and silk, reflected the influence of shipping conditions and the effects of war. Processing of a number of such materials had to be curtailed drastically by the end of the year.

Steel Capacity Proves Inadequate.

Production of ingot steel aggregated 82.9 million tons, 16 million tons, or 24 percent more than in 1940, and 34 percent above the 1929 volume. Near-capacity output throughout the year was necessary to achieve this total, average plant utilization being 97.4 percent. In 1940, by contrast, a reduced demand in the early months had caused production to run below 80 percent of capacity for 4 months.

Demands for steel far exceeded the rate of output after midyear as a result of the combined requirements for consumer durables, capital goods, the increasing volume of war output, and some expansion of inventories. This led to the placing of steel under priority status in August, with control over the allocation of the metal increasing as the year progressed. Limitations on production of many consumer durables and other goods stemmed from the steel shortage, which became the single factor most seriously limiting the advance in total national output.

Approximately 4 million tons were added to basic steel capacity, bringing the total to 88 million tons at year end. Moreover, 2 million tons of additional capacity were under construction, and a further large increase was expected to be undertaken.

While a larger basic steel industry would clearly be useful over the war period, supply of steel for essential military and capital goods production was not limited solely by over-all capacity of steel furnaces. For example, war industry requirements for high-specification steels (notably alloy bars and armor plate) placed a very heavy burden on electric furnaces and expansion of this type of capacity was especially necessary during the year, the total being increased by more than one-half from 2.6 million tons to roughly 4 million tons. Capacity for rolling the heavy plates used in

ships and railroad cars also was strained, and had to be enlarged by building new mills and by some conversion of wide strip mills.

Table 3.—Indexes of Industrial Production, adjusted for seasonal variation, 1940 and 1941

[1935-36=100]

Industry	1940, annual	1941, annual	Percent increase	Dec 1940	Dec 1941	Percent increase
Industrial production, total.....	123	153	24.4	129	183	42.6
Manufactures, total.....	124	151	22.6	142	175	23.2
Durable manufactures, total.....	138	193	40.6	164	215	31.1
Iron and steel.....	147	185	26.5	172	199	15.7
Machinery.....	135	209	54.8	161	239	48.4
Aircraft.....	410	978	138.5	635	1,310	107.0
Automobile bodies, parts, and assembly	116	140	20.7	125	150	19.2
Railroad cars.....	141	222	57.4	172	267	55.2
Shipbuilding.....	100	443	343.0	383	699	81.7
Nonferrous metals.....	137	184	34.3	163	191	17.2
Lumber and products.....	116	134	15.5	132	138	4.6
Stone, clay, and glass products.....	121	152	25.6	140	166	18.6
Nondurable manufactures, total.....	113	135	19.5	128	142	10.9
Cotton consumption.....	120	158	31.7	142	155	9.2
Wool textiles.....	104	160	53.8	145	179	23.4
Rayon deliveries.....	138	168	20.3	156	175	12.1
Leather products.....	97	121	24.7	109	127	16.5
Manufactured dairy products.....	114	129	13.2	125	140	12.0
Meat packing.....	125	129	3.2	134	142	6.0
Other manufactured foods.....	113	129	14.2	120	141	17.5
Paper and pulp.....	132	145	9.9	131	152	15.3
Petroleum refining.....	113	154	35.4	116	135	16.4
Chemicals.....	114	139	21.0	121	153	26.4
Rubber products.....	123	151	22.8	144	174	20.8
Minerals, total.....	117	125	6.8	118	120	1.7
Bituminous coal.....	114	120	5.3	115	124	7.8
Anthracite coal.....	191	206	7.9	198	208	5.1
Crude petroleum.....	116	120	3.4	114	121	6.1

¹ 1941 data are in many cases preliminary.

² Average for 11 months.

³ November 1941, December figure not available.

⁴ Average for 10 months.

⁵ October 1941, the latest figure available.

Source: Board of Governors of the Federal Reserve System

However, more important than difficulties of this sort was a shortage of essential steel-making materials. Scrap metal and pig iron, used in roughly equal proportions in charging the open-hearth furnace, can be substituted for one another to some extent, but continuous heavy operation of the mills had caused both to be in short supply. Because of the long period required for construction of blast furnaces, in which pig is made, expansion of this capacity lagged seriously behind the growth in steel ingot facilities, total additions to blast furnaces aggregating only 1.8 million tons during the year. Similarly, the rise in scrap consumption from 3.5 million tons per month in 1940 to 4.6 million tons per month in 1941's last quarter outdistanced the rate at which industry and scrap collectors made the metal available. At year end scrap-collection campaigns were under way, with special attention to auto junkers, farms, and railroads.

Nonferrous Metals.

Armament production makes especially heavy demands on the nonferrous metals. To such needs in 1941 were added the exceptionally large requirements from consumer durable industries, from the utilities, and from other capital goods lines, including construction. The net result of these demands as they im-

pinged on available supplies was a series of acute shortages.

Munitions and electrical installations in fighting equipment required an increasing share of available copper, the most important nonferrous metal with respect to tonnage. Large additional amounts were needed for essential industrial power purposes. Civilian consumer use of the metal increased to midyear, but was then severely restricted by priority action. Widespread inventory accumulation made copper supplies additionally tight.

On the supply side, the year's most important development was a radical reversal of our foreign trade in the metal. In contrast to prewar years when net exports of copper were frequently large, 1941 found exports nearly eliminated and imports contributing heavily to total supply. The Metals Reserve Company entered into contract with Latin American producers for delivery within the year of refined metal and ore equivalent in the aggregate to 475,000 tons of copper. Actual imports in the first 9 months, including those resulting from this contract, totaled 495,300 tons, and the rate was to be increased in the final quarter.

Some expansion in domestic output was also attained. The limiting factor here was mine production and collection of scrap. Refinery capacity was fully adequate. Output of refined metal from domestic refineries using scrap and domestic ores aggregated 1,031,000 tons during the year, roughly the same as the 1,034,000 tons in 1940. But behind the apparent failure to expand production was an actual increase of considerable proportions. In 1941, an addition—in the neighborhood of 150,000 tons—was made to melting of scrap copper by ingot makers, which take most of the secondary metal not processed by refineries. Thus, even allowing for an increase in scrap collection, refineries must have processed considerably more ore.

Maximum activity in domestic copper mines was sought. In November, Phelps Dodge's new Morenci mine was opened, after 5 years of development work, adding 75,000 tons to annual capacity. Additional economic ore sources exist, both here and abroad, but time is required for their development. That price might not be a limiting factor on submarginal output, arrangements were concluded at the turn of the year for the purchase by the Government, at 17 cents, of all output in excess of a quota, which was based on cost factors and 1941 output. This policy was in contrast to the 23½-cent bulk-line price set for all copper output in the last war.

Consumption of aluminum and magnesium also increased greatly as the result of the military program, demand in this case being heavily concentrated in aircraft and incendiary bomb manufacture. Output of light metals had been growing steadily over the previous decade, as the result of decreasing prices and suc-

cessful introduction into many new types of manufacture, but amounts involved were on a much smaller scale than were now required. Aircraft production of early 1941 was enough to absorb nearly the entire available supply. In February and March both metals went under mandatory priorities, among the first to have their distribution so controlled.

Some expansion of capacity had been started by the industry itself during 1940, in anticipation of the aircraft program's requirements, but the amount was clearly inadequate and a broad expansion under Government sponsorship was launched. By the end of December 1941, contracts totaling more than 600 million dollars had been let for new nonferrous metals facilities, primarily aluminum and magnesium.

As a result of the expansion effort, aluminum production rose from 412 million pounds in 1940 to over 800 million pounds in 1941, and facilities were under construction vastly to increase output in 1942. An even sharper percentage increase in magnesium supply was attained, production rising from 12 million pounds in 1940 to 33 million pounds in 1941, with a much larger increase expected for 1942. Aluminum supply was also to be augmented greatly in 1942 by imports of refined metal from Canada.

Consumption of lead and zinc also increased. Direct war uses for the former are not considerable—battery plates, bullets, and shrapnel balls being the most important items. However, zinc was consumed in large quantities as a component of cartridge brass. But for both metals, essential industrial and civilian products absorbed the largest supplies, especially as these metals came to be substituted for more scarce materials, such as copper, aluminum, magnesium, and even steel.

Apparent new supply of lead available for domestic consumption advanced 19 percent over 1940 levels to about 1,107,000 tons, while slab zinc consumption of 750,000 tons was an 11.5-percent increase. Imports were the major factor in increasing lead supply, as domestic refining of primary lead advanced only 8 percent to 590,000 tons.

Zinc moving into domestic consumption from foreign sources also recorded significant gains. But the major part of increased zinc supply came from domestic refineries, which produced 864,000 tons of slab compared with 1940's 706,100 tons. Expansion of refining capacity enabled the industry to attain production at an annual rate of 926,000 tons by year end.

The most important raw material affected by the hostilities in the Pacific is rubber. More than 97 percent of the Nation's crude rubber supply normally comes from areas now overrun by the Japanese or which are the immediate objective of enemy thrusts.

Consumption of crude rubber in 1941 reached a record high of close to 800,000 long tons (on the basis of 9 months' data) compared with 648,500 tons in 1940. Some 250,000 tons of reclaimed rubber was also used in the past year, almost a third more than in 1940. The automobile industry normally requires the largest proportion—almost three-fourths—of crude rubber. Hence, the restriction necessitated by the outbreak of war bore most heavily on it.

Stocks of crude rubber increased from 309,000 long tons at the beginning of the year to 455,000 tons in October, the latest month for which statistics were made public, and a further inflow was received in the next several months. Most of the increase occurred in emergency reserve stocks accumulated by the Government.

Reclaimed rubber can take the place of crude to a limited extent, though it cannot be used for all purposes. Output is now at an annual rate in excess of 300,000 long tons. Estimates of available scrap indicate that an annual output of 500,000 tons can be maintained for about 3 years. This will require a substantial increase in reclaimed plant capacity. At present, production of crude rubber in the Western Hemisphere, both from trees and the guayule shrub, is quite limited and cannot be quickly expanded. The only large immediate source of new rubber is from synthesis. Output of synthetic rubber in 1941 was about 12,000 tons. A 400,000-ton expansion program has been announced, half of which may be in production early in 1943.

Large military requirements for rubber and limited stocks impelled immediate action to conserve supplies. A few days after the Japanese attack, sales of new tires were prohibited and rigid restrictions placed on handling and processing other rubber products. A rationing system restricting sale of new tires and tubes to users performing specified essential functions has been in effect since January 5. A drastic control program effective February 1, curtailed the use of crude rubber in essential civilian products and banned its use in nonessential products.

Chemicals.

The past year was the most active year in the history of the chemicals industry. Major civilian uses of chemicals are ordinarily in manufacture of fertilizer, pulp and paper, glass, petroleum products, paints and varnishes, iron and steel, and textiles. Without exception these industries were operating at record levels during the year, and the long-term trend towards greater use of chemicals and chemical products was in evidence. Of equal importance to chemical demand was the military program, which called for immense tonnages of explosives.

During the year aggregate production of basic and subsidiary chemical products (including drugs, fertilizer, paints and varnishes, rayon, soap, cottonseed, and explosives products) advanced more than a fourth, as measured by the Federal Reserve's index. Within the group, the increase was much larger for many important products. For example, output of sulphuric acid rose to an estimated 8.5 million tons, compared with the previous record, in 1940, of 5.4 million tons. Chlorine production was 13 percent heavier than in 1940, and the gain in soda ash roughly 10 percent. Despite the expansion, year end saw many chemicals in as severe shortage as the metals, and such industries as paper and pulp, textiles, and metallurgy were forced to modify important processes.

A vast complex of raw material and finished explosive facilities were being constructed during the year in the interior of the country. Their total contract value as of the end of December aggregated above 1,150 million dollars. By the end of 1941, production was in heavy volume, and throughout the current year material requirements of the explosives program will strongly influence the chemical industry.

Coal and Petroleum.

Coal mining activity, linked closely like all fuel production to the general level of production, was greater than in 1940. Despite the April and October work stoppages, aggregate output of bituminous (502,860,000 tons) and of anthracite (54,339,000 tons) were 11 percent, and 6 percent, respectively, above the previous year. But the downward secular trend in coal consumption, due to greater use of oil and hydroelectric power in industry and of oil in homes, was at work. Thus, 1941 bituminous consumption had been exceeded in 1929, although over-all activity was of course not so high in that year, while 1941 anthracite output was even less than in the recent semidepression years 1934 and 1936.

Despite the general cessation of coal shipments during the stoppages, and some difficulty in obtaining sufficient cars to make up the losses in other periods, the year end found large stocks of industrial coal in hands of dealers and users.

Petroleum output, which has shown an upward trend movement in recent years, also was influenced by the year's heavy industrial activity, though to a smaller extent than most other lines. Estimated output of 1,404 million barrels of crude and 670 million barrels of refined gasoline were 4 percent and 12 percent over the previous year. Drilling and wildcatting were slightly above the high levels of 1940, with discoveries of new reserves expected to be correspondingly advanced. The rise in domestic demand from 1,327 million barrels to 1,468 million barrels, which occurred in the face of a brief East Coast transportation shortage during the

summer, influenced drilling activity. Net export of petroleum declined from 47 million to 14 million barrels.

Of considerable importance also was the program for increasing output of 100-octane aviation gasoline. Refiners of this product were asked to install new equipment for expansion of output from 40,000 barrels to 150,000 barrels daily.

Pulp and Paper.

The 1941 production of paper and pulp exceeded 1940 output (itself a record) by nearly one-fifth, the most important gains being among paperboard and wrapping paper producers who were called upon to supply packaging materials for 1941's record manufacturing output. Some other products also advanced significantly; printing paper output was 17 percent greater than in 1940. But newsprint production continued at 1940 levels.

In the board and wrapping sector a distinctly military demand was being developed, as these materials were coming to be used in lieu of the last war's primarily wooden containers for the smaller sizes of ammunition, and for other military items. Wrappings and board were produced in sufficient volume during 1941, with output gains of 25 and 15 percent, respectively, over 1940.

Although trouble with chemicals supply and maintenance of equipment was encountered, the ultimate ceiling on paper production in the latter part of the year proved to be the supply of chemical pulp and wastepaper. Pulp output was at record levels, but less than adequate to meet all demands.

The chemical pulp industry had started 1941 with operations already at capacity levels as a result of the strong trend towards greater consumption of pulp, plus the loss in 1940 of Scandinavian and Finnish pulp sources, which normally furnished up to one-fifth of all chemical pulp consumed by this country.

A part of the year's increase in production was obtained by relatively small additions to capacity in both new and old mills. But more important was the more intensive use of existing capacity. Sulphate production aggregated 4,400,000 tons, exceeding 1940 output by 18 percent and that of 1939 by 49 percent. Sulphite production of 2,900,000 tons stood 12 and 49 percent above the production of the 2 earlier years. Production of ground-wood pulp, which was in relatively adequate supply, was up only 5 percent from 1940 and totaled 1,850,000 tons.

In addition to paper- and board-mill demand for pulp, a considerable and increasing quantity of the more highly refined types was taken for explosives, plastics, and rayon manufacture. Demands from these industries will continue to advance, and with increasing rapidity.

To the generally tight situation in chemical pulps.

some relief exists in greater use of ground-wood pulp and wastepaper. Although supplies of available waste were barely adequate in the latter part of the year, the potential supply is very large. The country habitually burns more than half of its wastepaper, and the War Production Board's collection campaign, successfully underway at year end, was consequently expected to recover large tonnages.

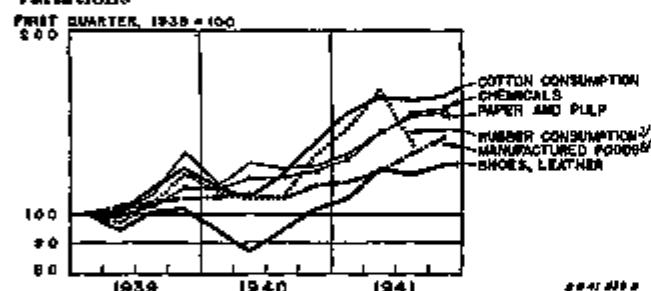
Consumers' Nondurables

Textiles

The output of consumer nondurables also reflected the impact of a record demand in 1941, though to a lesser extent than was the case for the durables. Nevertheless, even in these lines material shortages and strained production ceilings replaced the familiar over-capacity story of other years.

For example, the year 1941—one in which textile consumption reached record highs—ended with shortages actual or impending in each of the major textiles. The year's phenomenal expansion of activity brought

Figure 13.—Indexes of Output in Selected Nondurable-Goods Manufacturing Industries, Adjusted for Seasonal Variations



¹ Data for the fourth quarter of 1941 are not available for publication.

² Does not include data for wheat flour, cane sugar millings, manufactured dairy products, and meat packing.

Source: Indexes computed with first quarter, 1939 as base from data published by the Board of Governors of the Federal Reserve System. The December figure for Paper and Pulp, included in the fourth quarter of 1941, was estimated by the U. S. Department of Commerce.

the following percentage increases over 1940 consumption: wool, 69 percent; cotton, 31 percent; rayon yarn, 16 percent.

Raw cotton is the only fiber of which there are ample domestic supplies. To a carry-over of domestic staple of 12 million running bales, the 1941 cotton crop added about 11 million bales. The total domestic supply of about 23 million running bales for the 1941-42 season is more than double the record 1941 calendar-year consumption of 10.6 million bales.

Cotton mills in 1941 produced an estimated 11.5 billion square yards of cloth, up 20 percent from 1940. The expansion in output was obtained without any increase in spinning capacity. Cotton-spinning spindles in place on December 31, 1941, were 24.1 million, slightly less than at the end of 1940. Although the industry at the end of the year was operating at only about 60 percent of its absolute capacity (i. e., a 24-hour day and a 7-day week), only a small percentage increase

appeared possible because of labor shortages and inadequate machinery for essential operations. A widespread unbalance of equipment existed, with spinning equipment at full time straining to feed part-time loom operations.

Scarcities developed during 1941 in both cotton yarns and fabrics. Stringency in yarn supplies was concentrated in the combed yarns where war orders have been more important than in the carded yarns. Tightness in grey goods supply was evident in the latter part of the year. Scarce fabrics included both fine and coarse yarn constructions.

Cotton fabrics chiefly affected by 1941 defense requirements have been ducks, sheetings, osenaburgs, drills, twills, and denims. According to the Textile Economics Bureau, the Government's defense purchases of cotton textiles during 1941 amounted to about 15 percent of the output of the industry. The outlook at year's end was for a reduction of cotton textiles available for civilian consumption and a shift from the production of civilian to war fabrics. Direct allocation of specific constructions of cotton goods was introduced in the early weeks of the new year.

Heavy Wool Imports.

A significant feature of the 1941 wool textile situation was our greatly increased dependence on foreign sources for raw apparel wool. In the 10-year period, 1930-39, nearly 90 percent of United States apparel wool consumption was supplied by domestic production; in 1940, about 76 percent; in 1941, less than one-half. Imports during the first 9 months totaled 491 million pounds (final quarter figures are not available for publication). Statistics of imports for consumption indicate that South America has become our chief foreign source for both apparel wool and carpet wool. In 1940 and the first 9 months of 1941, about one-half of imports for consumption of apparel wool finer than 40's was from South America. This compares with an average proportion of one-fourth from South America in the years 1930-39. From this same area came two-thirds of the Nation's imports of carpet wool in the first 9 months of 1941. Domestic production of carpet wool is negligible.

United States wool production in 1941 was at a new high of 464 million pounds (grease basis), compared with an average annual production of 435 million pounds in the years 1931-40.

Although machine capacity was generally adequate to meet 1941 wool requirements, the situation in worsted spinning and wool combing was extremely tight. Military demand for wool was heaviest in the worsted cloths. The fighting services in 1941 accounted for an estimated one-third of the country's apparel scoured wool consumption of 516 million pounds (consumption had been 310 million pounds in 1940). Increased mili-

tary needs for wool in 1942 and our heavy dependence on imported supplies make it inevitable that civilian wool consumption be curtailed.

In January 1942, the Office of Production Management instituted a wool conservation program which restricted the use of new wool in the manufacture of materials during the first quarter of 1942 to 80 percent of the rate prevailing during the first half of 1941. As military requirements will be met in full, the entire effect of the restriction is on production for civilian use. More drastic curtailment may be expected as our armed forces expand and the extent of our participation in the conflict increases.

In 1941, consumption of apparel-class wool increased 66 percent to 516 million pounds. At this rate of consumption, stocks of apparel wool at the end of the year were equivalent to about 4 months' supply. In addition, substantial strategic reserves were held by Defense Supplies Corporation.

First branch of the textile industry to feel the pinch of war was the silk trade. Following the freezing of Japanese assets, an order of the Office of Production Management, effective August 2, stopped all raw silk processing by nondefense industries. Deliveries of silk to mills during the first 11 months of 1941 were 197,711 bales (including some 11,000 bales which were returned to the warehouses by the mills after August 1941), a drop of about one-third from the same period of 1940 and down two-thirds from the 11 months' total of the peak year 1929. Stocks at the end of 1941 were 55,486 bales. Hardest hit by the restrictions on use of silk was the hosiery industry, which in 1940 accounted for 90 percent of raw silk consumption. Notwithstanding these restrictions, hosiery manufacturers enjoyed a record year. Hosiery production in 1941 amounted to 150 million dozen pairs, over one-tenth more than in 1940.

Until 1940, silk was essentially the only fiber used by hosiery producers for the leg content of women's full-fashioned hosiery. Nylon, which entered this field in mid-1940, accounted for about one-fifth of the 1941 hosiery production. Nylon yarn capacity was approximately doubled in 1941 and a further expansion is projected for 1942. The hosiery industry cannot, however, count exclusively on nylon, the output of which is being increasingly devoted to military uses.

The burden of filling the void created by the restrictions on silk processing has rested largely on the rayon industry. Increased allocation of rayon to former users of raw silk intensified an already existing rayon stringency. Capacity operation of rayon plants was unable to satisfy the huge demand stemming from expanded consumer purchasing power and the silk substitution program even though rayon filament yarn

production of 451 million pounds stood 16 percent above the 1940 output.

Rayon capacity increased in about the same proportion. Imports of rayon yarn, as in other recent years, were very small, while stocks in the hands of yarn producers were negligible throughout the year. Unlike the situation in cotton and wool, very little of the demand for rayon yarn was of military origin. However, greatly increased war demands in 1942 are expected to restrict civilian rayon supplies.

Production of rayon staple fiber continued its rapid upward trend movement. Output of this fiber in 1941 was 122 million pounds compared with 81 million in 1940 and 165 thousand in 1928. Imports of the fiber dropped to about 12 million pounds, down one-third from 1940. Military demand for this fiber has also been small thus far.

Shoes.

Record shoe production in 1941 was over 490 million pairs, up one-fifth from 1940. Purchases for the armed forces amounted to only about 3 percent of total shoe production (roughly a tenth of the output of men's and boys' shoes). War inroads will be much larger in 1942. Each soldier requires during his first year a minimum of 10 pairs of shoes, including pairs in use, on hand in camps and depots, on order, and in process of being ordered. Hence, there will be fewer shoes for civilians in 1942, but no severe shortage. Stocks of shoes in the hands of retailers and consumers are large. However, the raw material outlook is not completely reassuring. Of United States cattle hide consumption in 1941, 70 percent was supplied by domestic production. The remainder came largely from Latin America and its continuance rests in the main on the shipping situation. In addition a number of tanning agents are in large measure imported. Some supplies have been cut off by war; others are becoming increasingly difficult to obtain.

Manufactured Foods

Production of manufactured foods, under the stimulus of enlarged consumer purchasing power and of the lend-lease program, was considerably above the 1940 volume. For a number of reasons set forth in the discussion of agriculture, foodstuffs sent to Britain were largely processed foods. The Federal Reserve index of manufactured food production increased from 114 in 1940 to 128 in 1941. Flour output and meat slaughter (except hogs) increased somewhat, while sugar meltings, output of dairy products, and production of other manufactured foods registered substantial gains.

War needs reflected in greatly enlarged farm production goals point to further large increases in manufactured food output. Notable exception is a likely reduction in sugar meltings because of obstacles to our

securing normal sugarcane imports.⁴ Output of tobacco products increased 10 percent over 1940 and production of alcoholic beverages was up about 15 percent. In 1942, a large proportion of the latter industry's distilling capacity will be devoted to making ethyl alcohol for use in explosives and plastics.

Record Output of Consumer Durables

Notwithstanding increased production for capital formation and military use, the output of consumer goods was in record volume during 1941. As suggested above, the largest gains appeared in the consumer durables, toward which an especially heavy demand was directed as a result of growing consumer purchasing power. However, it was such commodities that were in most direct competition with essential military and capital needs for materials, equipment, and skilled manpower. Hence, as the armament program expanded in the latter part of the year, the consumer durables were the first to experience priority restrictions.

These restrictions were neither applied quickly enough nor extensively enough to prevent a record output of many durables. Some 3.6 million domestic electrical refrigerators, 2.1 million domestic vacuum cleaners, and 2.3 million domestic washing machines and ironers passed down 1941 production lines. The Federal Reserve's index of furniture production jumped from an average of 117 in 1940 to 145 in 1941, 10 points above 1929 the previous record year. The 1941 automobile production of 4,838,581 units topped 1940 by 8 percent, was exceeded only by record 1929 production (sales were slightly higher in 1941, however). Of the 1941 output, 3,744,300 were passenger cars and 1,094,261 were trucks, the latter an all-time high.

The effect of this civilian production on the performance of these industries in contributing to war output is well illustrated by the experience of the automobile industry. For these large producers, war production in 1941 was a side line, occurring largely in new plants under construction throughout much of the year. Altogether, the industry had close to 5 billion dollars in arms contracts at the outbreak of war in December. Deliveries during the year were but a small fraction of this and were certainly much less than the wholesale value of 3.7 billion dollars for passenger cars and trucks produced in the same period.

The automotive industry in 1941 took approximately 9 million tons of finished steel, about 18 percent of the Nation's finished steel consumption. As the defense effort intensified and as the steel shortage became apparent, a curtailment program for automobile production developed. This program called for a cut in passenger car production, based on the same period in the preceding year, of 26.5 percent during August through

November. Deeper cuts in later months were to bring the 1942 model year 50 percent under that of 1941. Reductions for December and January were finally set at 60 percent and 51 percent, respectively. A comparable curtailment program for light trucks was designed to effect a 30-percent reduction for the model year. But at the beginning of 1942, in keeping with the all-out war production program, an order effective February 1 called for cessation of production of all passenger cars and light trucks.

Previous orders freezing automobile stocks created a reserve from which military and essential civilian demands could be satisfied. To form a reserve of parts for future needs before stopping production, producers were permitted to make during the first half of 1942 up to 150 percent of the number of replacement parts sold by them in the entire calendar year 1941. Civilian automobile output in 1942 will consist of medium and heavy trucks, and passenger carriers. Limitation orders applying to these items either do not exist or they are not severe.

From August on, an increasing number of other durable consumer goods producers were ordered to curtail operations. These included such lines as refrigerators, washers and ironers, vacuum cleaners, ranges, automatic phonographs, weighing, gaming and other amusement machines, and a long list of less important commodities.

Limitation orders for such lines varied widely in the degree to which they curtailed output. Thus, domestic mechanical refrigerator manufacturers were forced to cut production about two-fifths in the last 5 months of 1941; whereas, the large producers of vacuum cleaners reduced output by only 10 percent during the final quarter of the year (small producers were not forced to decrease their production at that time). In every instance, however, the degree of curtailment was stepped up very drastically at the beginning of this year.

The Outlook for Production

At the start of the new year, it is apparent that a drastic change in the pattern of output is to occur through the duration of the war. Production of war materials is to expand manifold. These are mostly durables—with the exception of chemicals—and output of the raw materials required for such commodities will be stepped up as new capacity can be constructed.

Similar raw materials are needed for the heavy capital formation required well into 1943. Building of new plant, of military works, and of a considerable volume of essential housing, will bring a heavy drain on many of the same materials that are used in the production of finished armaments. Moreover, the machinery industries must operate at a record pace to fill the staggering plant, utility, and direct military requirements. Some relief to both raw material and equipment pro-

⁴ See the discussion in the Survey of Current Business, January 1942, p. 6.

ducers will be afforded by a decline in maintenance and repair work, for as much of this will be deferred throughout the whole economy as is possible.

At the same time, the production of automobiles, electrical appliances, and most other consumer durable goods—even including furniture—will of necessity have to be either virtually eliminated or seriously curtailed. Neither the materials, the machinery, nor the necessary manpower can eventually be made available for such output.

Production of nondurables in all likelihood will be lower in the aggregate than during 1941. Wool supplies will be reduced, and this will possibly be the case with leather. Cotton and rayon output can be stepped up only to a limited extent, and silk goods production will largely be extinct. Pulp and paper output may decline slightly in the aggregate, and wide changes will occur in the relative importance of the various types and grades. On the other hand, chemical production is to expand very markedly, while the output of manufactured foods should also be increased.

Insofar as the total of all industrial output is concerned, the net result of these various changes will be a further advance. Supply considerations are the only limiting factor. At present, raw material shortages and inadequate plant capacity for finished armaments retard the production advance as a whole. But the ultimate limit to output is furnished by the labor force. This—as shown in the discussion on labor—can support a further increase in aggregate production while supporting a large expansion of the armed forces.

Agriculture

Agriculture was not excepted from the dominance of the war over the economic life of the Nation during 1941. The rise in civilian consumption created as a result of arms expenditures exerted a heavy influence on farm output, prices, and income, as domestic demand for food products and agricultural raw materials advanced sharply. But of growing significance throughout the year was another development: The agricultural needs of those nations who were to become principal allies of the United States were met to an increasing degree by this country.

Indeed, under the lend-lease program, food shipments within the course of the year became one of the largest export categories. As the agricultural requirements of the United Kingdom and other allied nations were somewhat specialized, the structure of agricultural output of necessity had to be altered, with a heavier emphasis on meats, eggs, dairy products, and certain canned vegetables and fruits. Production goals for 1942 emphasized these commodities more heavily than such staple crops as wheat, cotton, and tobacco.

As part of the effort to increase output where needed, the Government sought to raise agricultural prices.

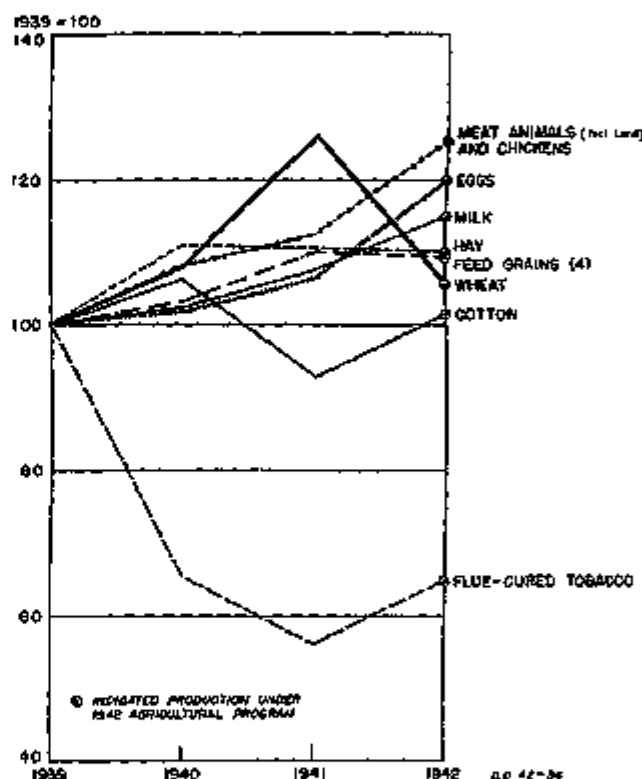
In this it was successfully aided by expanding purchasing power in the hands of consumers, and farm prices advanced materially in the final three quarters of the year.

A net result of these various developments was a very substantial gain in farm income. For the year as a whole, agricultural cash income (including Government payments) rose to 11.6 billion dollars, the highest in the last 21 years.

Agricultural Output at Record Levels.

To meet the expanded needs—both domestic and foreign—agricultural output was the largest in the

Figure 14.—Indexes of Production of Selected Farm Products



Source: Indexes computed with 1935 as base from data published by the U. S. Department of Agriculture.

Nation's history. Cereals, livestock, fruits, and vegetables—all were produced in heavier volume, and the index of aggregate production rose more than 3 percent over 1940 to a peak of 113 (1935-1939=100).

One of the principal gains occurred in the augmented output of livestock and livestock products. Domestic demand for these advances to a relatively greater extent during periods of rising income. Altogether, production of such commodities rose approximately 4 percent in 1941. Partly in answer to large foreign needs, both dairy and poultry products experienced the largest production advance they ever recorded. Output of each responded promptly to price-increasing Government purchases made in heavy volume in the second half of the year for lend-lease

account Meat output, on the other hand, was retarded by the 8 percent reduction in slaughter supplies of hogs, the result of the curtailed 1940 fall pig crop, and of delayed marketing in order to achieve heavier feeding of the 1941 spring pig crop. Nonetheless, production of meats rose moderately over 1940 to a new record volume. Milk, chicken and egg production also increased to new high levels in response to higher prices produced by Government purchasing.

The aggregate of crop production advanced to a somewhat smaller degree—about 3 percent—both as the result of an enlarged acreage (1 percent) and improved yields (up 1.3 percent for 18 major field crops and 10 fruits). The most notable expansion was in wheat acreage, while a reduction in acreage was carried into effect under restriction programs in the case of cotton and tobacco acreage. An outstanding improvement occurred in wheat yields continuing the trend of past years. The average yield of corn was also higher despite drought conditions in certain areas, reflecting the drought-resistant qualities of hybrid corn, planted last year on nearly two-thirds of the commercial area corn acreage. The out-turn of fruits was up, but the yield of vegetables for market declined, as did also the acreage yield of cotton and tobacco.

The Farm Program for 1942

The farm program for 1942 which in some of its aspects, was inaugurated as early as the spring of 1941, looks toward altering the structure of agricultural output to meet changes in export needs produced by the war.

Altogether, exports of leading agricultural products to the various Allied countries are expected to be at least 1.5 billion dollars in 1942. Such an export would be the largest since World War I and, despite increased farm output, would represent about one-tenth of total farm production.

As suggested above, the dominant export needs today, as in World War I, are in such foods as meats, dairy products, eggs, and canned fruits and vegetables. Great Britain found it necessary to curtail domestic output of livestock products in order to reduce the shipping space allotted to the imports of feeds and to utilize more efficiently existing acreage by the production of wheat, potatoes, and fresh vegetables. Moreover, heavy imports of meats, dairy and poultry products from the Continent are no longer available to the English. Nor is it possible for them to maintain as large agricultural imports from Argentina, Australia, and New Zealand, because of the scarcity of shipping facilities.

For these reasons, the United States has been requested to supply about one-fourth of Great Britain's requirements for animal protein foods. In addition, of course, both the food and agricultural raw material needs of other Allied countries are considerable.

The same foods that are being exported are those for which the advance in consumer purchasing power has increased domestic demand the most substantially. In an effort to meet all of these needs, it is hoped that the 1942 output of beef and veal can be expanded at least 5 percent, egg and milk production can be advanced about 13 and 7 percent, respectively, and the output of certain vegetables for canning (tomatoes are an example) can be stepped up very markedly.

Table 9.—American Agriculture in Two Wars
(1910-11=100)

Commodity group	1917	1918	1919	1940	1941
Farm population and employment					
Farm population.....	100	99	98	93	93
Productive workers (average employment).....	88	94	93	87	85
Family workers.....	97	93	91	87	85
Hired workers.....	101	98	90	85	83
Farm output per farm worker.....	106	116	119	131	130
Farm plants					
Acreage harvested					
17 principal crops.....	106	110	110	97	98
Corn.....	110	109	98	96	96
Wheat.....	98	121	146	105	111
Cotton.....	96	103	97	70	66
Milk cows on farms January 1.....	108	110	110	130	132
Agricultural production¹					
Grains.....	104	110	114	109	121
Fruits and nuts.....	89	98	96	100	119
Vegetables, except truck crops.....	118	107	97	124	125
Truck crops.....	117	125	130	133	138
Cotton and cottonseed.....	81	86	81	60	78
Total crops².....	99	104	108	131	123
Meat animals.....	108	121	118	128	131
Dairy products.....	108	106	111	137	136
Poultry products.....	97	100	107	138	150
Total livestock and livestock products³.....	106	113	114	139	155
Total (crops and livestock and livestock products).....	103	109	109	132	136
Consumption per capita					
All foods.....	96	96	96	102	103
Cereals.....	96	96	96	97	97
Fruits and vegetables.....	97	97	97	110	110
Meats.....	94	98	98	97	96
Dairy products and eggs.....	101	101	102	123	127
Sugar.....	99	95	111	124	131
Agricultural income					
Cash receipts from marketings.....	181	227	286	141	185
All crops.....	189	233	256	118	150
Food crops.....	180	247	268	95	97
Food grains.....	212	303	318	86	136
Fruits and vegetables.....	181	188	212	70	294
Cotton and cottonseed.....	188	218	278	79	132
Tobacco.....	223	318	468	222	255
Oil bearing crops.....	167	213	204	280	498
Livestock and livestock products.....	173	220	230	164	214
Cattle and calves.....	183	225	215	153	194
Hogs.....	182	275	282	121	182
Dairy products.....	155	182	228	158	208
Poultry and eggs.....	104	100	242	243	256
Net income produced by agriculture.....	181	220	227	120	178

¹ Volume of agricultural production for sale and for consumption in farm home.

² Preliminary.

³ Tentative estimate.

⁴ Includes tobacco, sugar crops, hay, peanuts, soybeans, cowpeas, hops, and legumes and grass seeds in addition to crops shown separately.

⁵ Includes wool and mohair.

Source: U. S. Department of Agriculture.

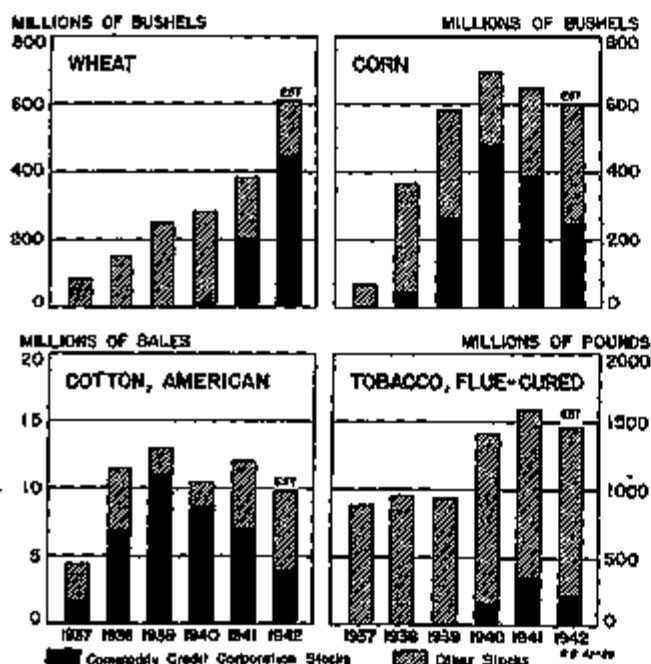
In some contrast to the expansion of output outlined above are the production plans for such basic staples as cotton, wheat, and flue-cured tobacco. The loss of foreign markets on the Continent and in the Far East has been offset in part by either increased export to other areas or heavier domestic consumption. The advance in the latter has been particularly large in the case of cotton.

Production of tobacco was severely curtailed in 1940 and 1941. (See figure 14.) This year, output

will be increased, but only moderately. Cotton output also was curbed in 1941 (11.0 million bales as compared with 12.6 million bales in 1940). For 1942, it is planned that cotton production should be increased to nearly 12 million bales. The principal crop reduction is planned for wheat, the 1941 yield of which was especially heavy. Though production of wheat may be cut about one-eighth to the minimum acreage allotment authorized by the existing agricultural adjustment legislation, the crop anticipated still would be in excess of estimated domestic consumption.

As is evident from figure 15, stocks of all three of these staples held by the Government were further

Figure 15.—Commodity Credit Corporation Stocks (Owned or Pledged Under Direct and Guaranteed Loans) and Other Domestic Stocks of Wheat, Corn, American Cotton, and Blue-Cured Tobacco



Note.—Stocks of Wheat and Tobacco on July 1, Corn on October 1; Cotton on August 1.

Source: U. S. Department of Agriculture.

increased during 1941. At present, the Commodity Credit Corporation is limited by law to the sale of 1.5 million bales of cotton annually, at least two-thirds of which is already committed for lend-lease export. A restriction of this character on the sale of wheat does not exist.

All in all, the United States is in a much stronger position today for meeting the enhanced agricultural requirements than it was at the time of the last war. That this is the case can be seen clearly from the data set forth in table 9, which summarizes the Nation's agricultural resources, production, and consumption, as well as the income of the farmer himself, at the time of World War I and today.

Table 16.—Purchases of Surplus Marketing Administration and Federal Surplus Commodities Corporation During Calendar Years 1940 and 1941

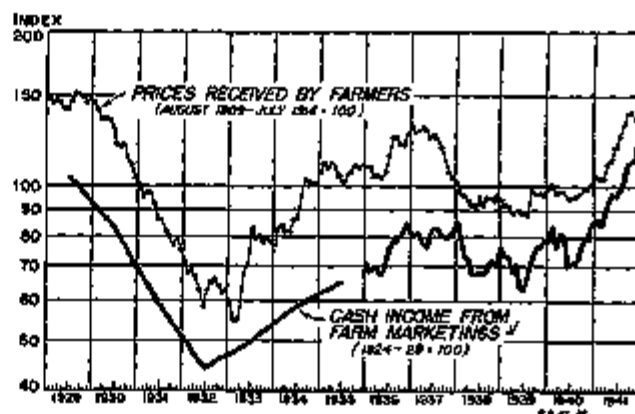
Commodity group	Quantity		Cost	
	1940	1941	1940	1941
	(Million of pounds)	(Million of pounds)	(Millions of dollars)	(Millions of dollars)
All foods.....	8,103.1	8,076.7	88.2	181.2
Meats.....	247.0	812.6	21.1	187.0
Canned pork.....	290.0	290.0	7.4	74.8
Pork cuts and lard.....	247.0	374.8	21.1	70.4
Dairy products.....	50.1	1,011.2	7.7	107.7
Butter.....	11.9	0.7	3.2	2.0
Poultry products.....	104.2	125.9	12.4	87.1
Eggs.....	804.2	180.6	12.3	80.1
Vegetables.....	511.9	771.8	5.6	75.2
Canned vegetables.....	209.6	209.6	11.2	11.2
Dry beans.....	81.1	279.8	1.8	10.6
Fruit.....	818.8	1,268.2	17.0	45.3
Canned fruit.....	10.6	210.0	6	12.5
Fresh apples.....	251.2	459.4	6.6	9.1
Dried prunes and raisins.....	181.4	246.1	5.9	14.5
Grain and grain products.....	1,326.3	548.7	24.1	18.3
Canned fish.....	2.8	198.6	1	20.1
Canned pork and beans.....	2.2	213.9	8	8.9
Other foods.....	2.2	87.8	8	10.6
Nonfoodstuffs.....	191.6	139.1	25.8	17.2
Total.....	8,294.6	6,276.8	114.0	496.4

Source: U. S. Department of Agriculture.

Farm Program Raises Prices.

The Government attempted to bring about the above changes in agricultural production through active control of many farm prices. In the case of a number of commodities, including hogs, evaporated milk, cheese, chickens and eggs, and a number of vegetables, the Surplus Marketing Administration actively entered

Figure 16.—Indexes of Prices Received by Farmers and Cash Income from Farm Marketings



Data do not include governmental payments. Indexes are plotted annually through 1936 and monthly thereafter. The monthly indexes are adjusted for seasonal variations and are not available prior to 1936.

Source: U. S. Department of Agriculture.

the market and purchased the product at higher prices for lend-lease export. The Government guaranteed that the prices to be received by farmers for these commodities would not fall below 85 percent of parity through June 30, 1943. Of course, the parity itself varies directly with changes in the price of commodities used by farmers, as well as with changes in the interest and taxes they pay.

In the case of basic crops on the other hand, prices were raised in conjunction with crop control programs, irrespective of whether output needed to be curtailed as with wheat, or increased moderately, as in the instance of cotton and tobacco. These price advances were effected by Congressional legislation raising 1941 loan rates. The loan rates for wheat, corn, cotton, tobacco, and rice were placed at 85 percent of parity—an advance ranging from 15 to 50 percent over the loan rates which had prevailed in 1940.

Table 11.—Indexes of Prices Received by Farmers
(Aug 1909=July 1914=100)

Group	1909	1940	1941	Dec 15, 1940	Dec 15, 1941
All farm products.....	85	88	122	101	143
Grain.....	72	85	96	81	112
Cotton and cottonseed.....	73	81	113	79	138
Fruit.....	77	79	92	76	98
Truck crops.....	106	114	145	98	166
Meat animals.....	110	108	146	111	160
Dairy products.....	104	113	131	128	148
Poultry and eggs.....	84	96	122	122	163
Miscellaneous.....	85	109	114	102	104

Source: U. S. Department of Agriculture.

The degree to which agricultural prices reacted to the stimuli was suggested in the discussion of commodity prices above. Prices of many commodities rose to parity or above as the combined domestic and foreign demand proved exceptionally heavy. Moreover, speculative activity in the principal markets contributed greatly to the price advance, as it appeared that price control legislation would permit ceilings to be imposed upon individual farm commodities only at high levels. Thus, cotton and cottonseed rose 75 percent, grains more than 50 percent, and meat animals 45 percent. The average of all prices received by farmers stood 42 percent higher on December 15, 1941, than a year earlier. However, many farm commodities were still materially below minimum price-ceiling levels as provided in the Emergency Price Control Act of 1942.

Table 12.—Prices Received by Farmers and Indicated Minimum Ceilings for Selected Farm Products

Commodity	Unit	Prices received by farmers (United States average)			Indicated minimum ceiling Jan. 1, 1942
		Dec. 15, 1940	Dec. 15, 1941	Jan. 15, 1942	
Wheat.....	Cents per bu.	71.5	102.2	106.1	142.0
Corn.....	Cents per bu.	54.6	66.9	72.7	105.1
Cotton.....	Cents per lb.	9.32	18.28	16.68	21.6
Potatoes.....	Cents per bu.	54.9	57.7	57.6	124.1
Chickens (live).....	Cents per lb.	13.0	13.8	17.0	31.1
Eggs.....	Cents per doz.	20.9	34.1	31.3	34.1
Hogs.....	Dol. per 100 lbs.	5.09	10.25	10.55	11.79
Beef cattle.....	Dol. per 100 lbs.	7.64	9.38	9.77	9.38

¹"No maximum price shall be established or maintained for any agricultural commodity below the highest of any of the following prices, as determined and published by the Secretary of Agriculture: (1) 110 per centum of the parity price of such commodity, adjusted by the Secretary of Agriculture for grade, location and seasonal differentials, or, in case a comparable price has been determined for such commodity under subsection (b), 110 per centum of such comparable price, adjusted in the same manner, in lieu of 110 per centum of the parity price so adjusted; (2) the market price prevailing for such commodity on Oct. 1, 1941; (3) the market price prevailing for such commodity on Dec. 15, 1941; or (4) the average price for such commodity during the period July 1, 1940, to June 30, 1939."—Emergency Price Control Act of 1942, sec. 3, subsec. (a).

Source: U. S. Department of Agriculture.

Farm Income Highest Since 1920.

As a result of the increased output and higher prices, farm income in 1941 was the largest in the last 21 years. Cash income rose about 2.5 billion dollars, or more than one-fourth above the 1940 volume, to a total of 11.6 billion. In 1920, agricultural income was 12.6 billion.

The advance occurred by way of increased income from farm marketings. This expanded from 8.4 billion dollars in 1940 to 11 billions last year. Benefit payments made to the farmer by the Government decreased slightly to 600 million.

The rise in farm income was offset in part by an advance in the price of commodities purchased by the farmer. On the average these prices increased about 6.5 percent; hence in terms of purchasing power, cash farm income may be said to have risen in the neighborhood of 20 percent.

Consumption

Though the United States devoted an increasing share of the national product to preparation for war during 1941, consumption of goods and services by civilians rose markedly to an all-time peak. Consumers were in possession of greatly augmented purchasing power as a result of increased employment created directly or indirectly by public expenditure for armament. Wage rates, dividend payments, and other incomes also advanced, and added considerably to funds available for consumption.

Moreover, the existence of unemployed labor, the policy of constructing new finished armament facilities rather than converting existing plant devoted to producing civilian goods, and the fact that raw material use was relatively uncurbed during the first two-thirds of the year, all combined to make possible a record output of consumption goods. Only in the final quarter of the year was the output of consumers goods seriously threatened by raw material shortages. But even then, sizable inventories of the commodities eventually to be in short supply made possible the maintenance of sales.

With the outbreak of war, the increased supplies of goods for consumers coexistent with a growing quantity of armaments came to an end. The immediate stepping up of the arms program, the conversion of civilian plant, the curtailment of supplies from the Far East, and the spreading shortage of many raw materials, made it abundantly clear that consumption would be fettered to an increasing degree for the duration of the war.

For 1941 as a whole, consumer expenditures for goods and services rose to 74 billion dollars. The previous year they had been 65 billions. After adjusting for the rise in retail prices, it appeared that real consumption had risen nearly 10 percent. When compared with

1929, consumption for 1941 had advanced one-fifth while on a per capita basis it had increased in the neighborhood of one-eighth.

Thus, the Nation entered a war period extraordinarily well prepared for the restrictions on consumption that will be required. Stocks of durable goods in the hands of consumers were the highest in history, with an unusually large proportion of them produced in the last few years and hence in very good shape. Moreover, production of nondurables, including foods and other agricultural products, was also at a record high.

Retail Distribution

Sales of retail stores mirrored the course of the consumption advance, both in its entirety and in the varying movements of the different commodities. Retail purchases rose to an estimated total of 53.6 billion dollars, more than one-sixth above the 45.7 billion dollar volume of the previous year. However, allowance for higher prices cut the gain in real terms to approximately one-tenth.

The aggregate of sales within the year was what might have been expected, on the basis of past relationships, with the level of income that existed. However, the pattern during the year differed quite markedly from the movement that usually occurs as a result of seasonal influences.

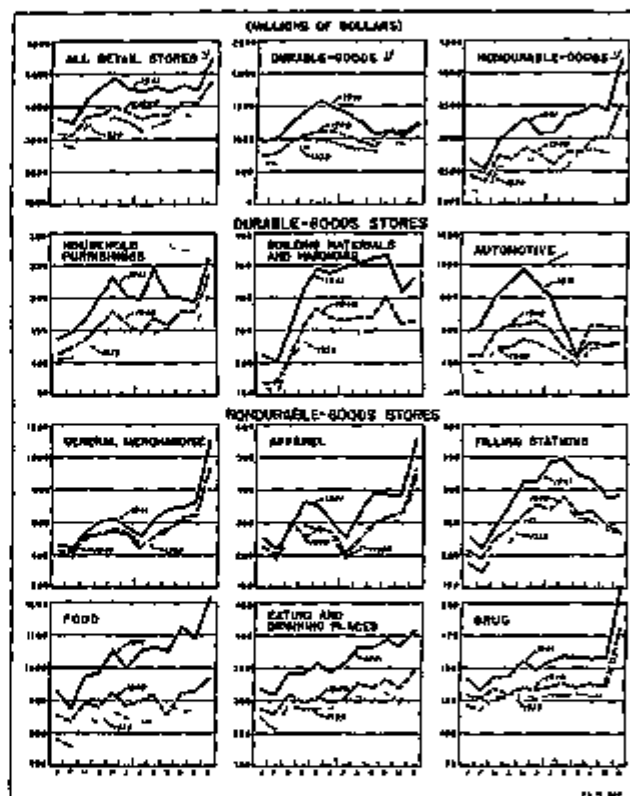
Retail purchasing was in line with income payments for the most part during the first six months. But in the third quarter, a combination of events set off a wave of consumer buying that expanded sales to an unusual degree. Of chief importance in this regard were the cessation of silk imports from Japan, a growing awareness of raw material shortages among the metals, and an anticipation of rising retail prices because of new Federal taxes and previous mark-ups at the wholesale level.

Following the unusual third quarter sales, purchasing in the fourth quarter, including the Christmas season, fell short of expectations based on consumer income. But again at the start of the current year, 1942, the issuance of a number of orders limiting civilian production in many lines unleashed another buying wave of even more generalized nature. Hence except where purchasing was restricted by Government order, sales during January did not experience the after-holiday let-down to anywhere near the usual extent.

Though output of many civilian durables had been limited in the final quarter of 1941, supplies were ample for the most part to fill demand. The extraordinary production in the previous 9 months had made possible an expansion of wholesale and retail stocks, and these were drawn upon, even through the first part of this year. At the same time, however, in those cases where supplies were shortest, rationing was undertaken in an effort to realize an efficient distribution among con-

sumers. Thus, as pointed out in the introductory section, by the start of 1942 it had become apparent that the pattern of consumption for the duration of the war would be altered drastically and that the aggregate of goods available for purchase would be seriously curtailed. Nevertheless, the country is in a relatively good position to meet the essential requirements of the civilian population even under the high stress of a full war effort. But many of the items in its high living standard will have to be sacrificed for the time being.

Figure 17.—Value of Sales of Retail Stores by Kind of Business



¹ Includes data for "Other Retail Stores" group not shown separately in this chart.
Source: U. S. Department of Commerce.

Sharp Expansion in Sales of Durables.

Consumer demand for durable goods reacts most strongly to changes in the level of income and employment. Hence, sales of such items as automobiles and their supplies, household furnishings and appliances, and building materials and hardware, all advanced very sharply in 1941. Purchases of these commodities increased on the average from 20 to 25 percent, when measured in terms of value. Gains also were extensive in real terms; sales of new passenger cars, for example, increased to 3,800,000 units, the second best year in the history of the industry and approximately one-tenth above the previous year.

Retail buying of nondurables also increased considerably during 1941, the value of sales rising 16 percent on the average. Among stores specializing in these

commodities, apparel shops experienced the most heavily expanded business, with the value of sales advancing one-fifth. Even food stores, whose business usually fluctuates to a smaller extent than does that of most other shops, experienced an unusual rise in sales of more than one-seventh, though a good part of this increase represented higher prices. Likewise eating and drinking establishments reported large sales increases, extending a steady growth of recent years. The sales volume of this group moved ahead 16 percent in 1941

Table 13.—Sales of Retail Stores, by Kind of Business

Stores, by kind of business	Sales (millions of dollars) ¹					Percent- age in- crease 1941 over 1940
	1929	1935	1939	1940	1941	
All retail stores.....	48,469	24,517	42,080	46,694	53,612	17.3
Durable goods stores.....	14,180	4,844	10,376	12,107	14,393	22.4
Nondurable goods stores.....	34,279	19,673	31,603	34,587	39,219	15.6
Food.....	10,967	8,778	10,165	10,764	12,411	15.3
Eating and drinking.....	2,125	1,450	2,520	2,721	4,319	16.1
Apparel.....	4,241	1,950	3,359	3,412	4,089	19.8
Filling stations.....	1,787	1,652	2,823	2,932	3,500	17.4
Building materials and hard- ware.....	3,845	1,343	2,785	2,997	3,722	24.6
Household furnishings.....	2,755	906	1,783	1,984	2,387	23.4
Automotive.....	7,043	2,367	6,546	6,316	8,226	30.6
Drug.....	1,690	1,068	1,542	1,660	1,894	13.0
General merchandise.....	9,615	4,932	6,475	6,791	7,516	12.1
Other.....	4,990	2,132	4,221	4,633	5,479	18.3
All retail stores in 1935-39 dol- lars.....	41,032	28,262	42,667	46,749	53,182	9.7
All retail stores, per capita, in 1935-39 dollars.....	338	225	326	347	377	8.6

¹ For capita sales in dollars

Source: U. S. Department of Commerce

Buying from general-merchandise stores rose to a somewhat smaller extent, with sales up about one-eighth on the average. However, within this group purchases from mail-order houses, responding in part to greatly augmented farm income, jumped nearly 30 percent as compared with 1940. Department-store sales increased 17 percent.

Consumer Credit Supports Retail Trade

As in past years, consumer purchasing was augmented by abundant credit supplies available on liberal terms. Approximately one-seventh of retail sales were made either on an installment account basis or by means of cash obtained through installment loans.

The movement of consumer credit followed closely the changing volume of consumer durable sales. Thus extremely heavy buying during the first 8 months of 1941 was a major factor in the growth of total consumer installment credit to a record peak of 6.1 billion dollars outstanding at the end of August. Subsequent to August, however, sales of durables lagged and these total outstandings declined by the end of the year to approximately 5.6 billions. Moreover, the likelihood of a drastic reduction of consumer durable goods output pointed to a very marked decline in the volume of installment credit. Consumers will continue to make repayments on the debts built up during the past several

years. However, they will find it impossible to buy many commodities, particularly durable goods, which normally involve the use of credit, and a sharp contraction of retail consumer installment debt will result.

The volume of retail installment sales increased more than one-sixth in 1941 to a record total of 6.9 billion dollars. This figure does not include a further estimated 1 to 1.5 billion dollars which was made available for purchase of consumer durables through cash loans made by banks and other credit agencies. Thus total consumer purchases on some form of installment credit in 1941 were in the neighborhood of 8 billion dollars.

Roughly nine-tenths of retailers' installment sales represented such consumer durable goods as automobiles, refrigerators, ranges, and a variety of household equipment and hard merchandise. The remaining tenth chiefly included apparel and other soft goods, and jewelry. As in other years, by far the largest volume of sales on time was made by automobile dealers, including both new and used cars. Indeed, more than half of total retail installment sales (approximately 3.9 billions) represented time payment sales of automobiles, an amount nearly 20 percent in excess of 1940. Installment credit advanced by general merchandise stores and furniture stores also gained about 20 percent to a combined total of 1.6 billion dollars in 1941. A somewhat smaller rise was reported by household appliance and radio stores.

Federal Reserve Board Places Curbs on Consumer Credit.

One event of some significance in limiting retail sales of durables during the final quarter of 1941 was the tightening of consumer credit terms under regulations promulgated by the Federal Reserve Board. By Executive order in August, the Board was directed to regulate the issuance of consumer credit as an aid in curtailing the demand for commodities which embodied raw material needed in the output of armament and in the construction of capital facilities required by the armament program.

To this end, regulations governing the issuance of installment credit for 24 metal-using commodities were placed in effect on September 1. In general, these regulations increased down payments and shortened payment periods. In but few instances, however, did the new terms differ drastically from those already prevailing over large sections of the trades concerned.

Though the new credit regulations may have played some part in cutting installment credit during the final quarter of 1941, they probably exerted only minor influence. Of more importance were the various factors set forth above which led to consumer stocking during the late summer months, but curtailed consumer demand in some segments of the retail markets at year end. Mainly because of reduced production of consumer durable goods, a further drastic decline in installment credit outstanding is expected throughout 1942.

Wholesale Distribution

Wholesalers experienced a general expansion of business in 1941. Both the high rate of business expenditures and the increase in retail sales were instrumental in elevating the aggregate of wholesale trade to 80 billion dollars. This value, of course, is the sum of all intermediate transactions, the same commodity often passing through the hands of several dealers. The 1941 total represented the largest volume in trade annals and was an increase of 18 billions or 29 percent over 1940. Here again, however, higher prices were responsible for a good part of the advance—possibly as much as two-fifths.

The most important wholesale group are the service and limited-function dealers. These more closely represent what are generally termed wholesale merchants and jobbers, and they account for about 40 percent of the total wholesale trade. The remaining trade is handled for the most part by manufacturers' sales branches and offices, petroleum bulk stations and terminals, agents and brokers, and assemblers.

The service and limited-function dealers increased their business about 30 percent, turning over some 34.5 billion dollars of goods within the year. Much of this gain was concentrated in the first 3 quarters, as retailers purchased in steadily heavier volume during this period. Not a little of the buying by retailers represented inventory accumulation, which by autumn was almost a fifth higher than in the like period of 1940 (here again part of the increase represented higher prices).

This retail stock accumulation, in combination with less vigorous consumer buying, slowed wholesalers' sales somewhat in the final quarter, in contrast to the marked advance in the earlier part of the year.

As was the case among retailers, those wholesalers specializing in durable goods received the largest increase in business. This movement was even more evident for wholesalers, since those handling producers' goods, such as machinery, metals, hardware, plumbing and heating supplies, and electrical goods, received business ranging from 40 to 50 percent above the 1940 value. Wholesale dealers in dry goods, clothing and footwear, lumber and building materials, and furniture and housefurnishings increased their sales about one-third in value. Again, even grocery and food dealers, whose gains usually do not vary widely from year to year, reported sales receipts one-fifth higher in 1941 than in 1940; price changes, however, accounted for the major portion of the advance.

Inventories

A substantial part of 1941 output went into inventory holdings. Altogether, business inventories were expanded to record size in a broad wave of accumulation that reached its crest in the final quarter of the year.

However, in contrast to the large inventory advance that occurred in 1937 and in the closing months of 1939, last year's rise did not serve as a major factor shaping the increase in aggregate production. Rather it reflected the needs of that increase, as well as the reaction to the supply and price conditions thereby created.

Thus, a sizable part of the advance in manufacturers' stocks represented goods in process and necessary raw materials as growing output required larger inventories in these forms. At the same time, the strong demand for final products which prevailed in all markets throughout the year effectively prevented any excessive piling up of finished goods inventories in the hands of manufacturers. Finally, the continued rise in prices, as well as actual and potential shortages led to much protective buying. Of course, increased prices also

Table 14.—Estimated Value of Inventories
(Billions of dollars)

End of year	Grand total	Manufacturers			Wholesalers	Retailers
		Total ¹	Durable	Non-durable		
1938.....	15.2	10.0	4.4	5.1	3.2	4.9
1939.....	16.3	10.7	4.8	5.4	3.5	5.1
1940.....	21.2	11.9	5.8	5.8	3.7	5.5
1941 ²	27.3	15.8	7.8	7.3	4.7	6.8

¹ Includes the printing and publishing and miscellaneous industries.

² Preliminary.

Source: U. S. Department of Commerce.

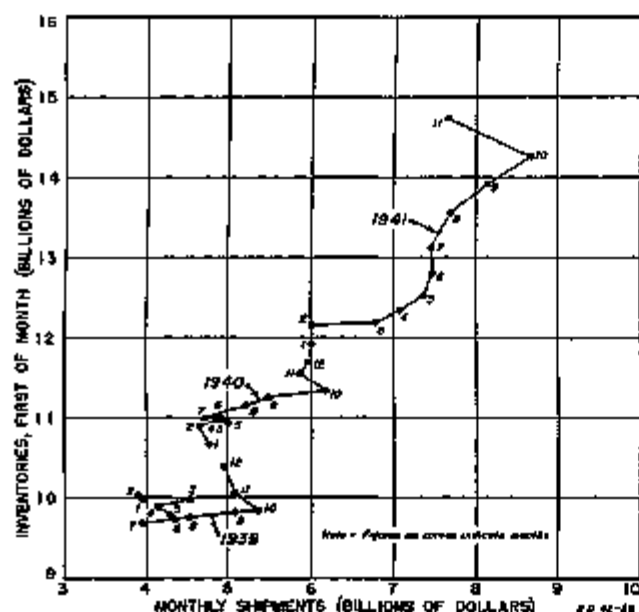
made for higher valuations as supplies were converted into inventories at progressively higher prices.

Combined inventories of manufacturers, wholesalers, and retailers amounted to 27 billion dollars at the end of December, more than 6.1 billion above their value at the end of 1940. Though over one-third of the rise can be attributed to higher prices, the increase in physical stocks was the largest yet reported. Manufacturers registered the heaviest advance of the three groups, as their holdings rose to a value of 15.8 billion dollars at the end of the year, compared with slightly less than 12 billion at its beginning. Retailers' stocks increased in value from 5.5 billion dollars to about 7 billion, while a rise of a billion in wholesale stocks lifted their aggregate value to 4.7 billion. In percentage terms, manufacturers' inventories increased 33 percent, while those of retailers and wholesalers advanced 24 and 27 percent, respectively.

An outstanding feature of the last half year was the sharp increase in the value of inventories relative to output in manufacturing industries. This development reflects the many influences retarding output gains plus those leading to protective inventory accumulation as the year progressed. Much of the available slack in manufacturing capacity, which had made possible earlier large increases in output, had been taken up by the middle of the year. As a result, the Department's index of manufacturers' shipments (Jan-

uary 1939=100) rose only 15 points after June compared with a rise of 39 points during the preceding six months. On the other hand, the rate of inventory accumulation in the last half of the year was approximately double that prevailing over the first six months. Both factors thus combined to lift the relationship of inventories to shipments to the new and higher levels shown on figure 18.

Figure 18.—Relationship between Manufacturers' Inventories and Shipments



NOTE—December 1941 data were not available in time to include them in this chart.
Source: U. S. Department of Commerce

During the first half of 1941 a parallel growth of inventories and shipments is revealed by the figure. Expanding output called for larger stocks in this period as in previous years. By the middle of the year, however, the emphasis in over-all inventory policy had shifted from the maintenance of previously established stock-shipment patterns to protective buying on a large scale. Though further advance in production had now become dependent upon the relatively slow expansion and conversion of facilities, inventories piled up at an accelerated rate. Moreover, the scope of the movement gradually broadened until it embraced almost the entire producing economy.

Durable goods industries continued to pace the rise with record accumulations of more than 700 million dollars in the final quarter and only slightly less in the third quarter of the year. Particularly large increases were recorded for those industries engaged in producing for the war effort. Thus, the index for transportation equipment closed the year at 662 compared with 428 in June and 278 at the beginning of the year. Similarly, the index for electrical machinery reached 238 at the year end—up nearly 100 points from the previous year. The Department's index of the value of inventories

held by all durable goods industries rose from 130 to 176 during the year.

The second half year also witnessed a tremendous advance in the value of stocks held by producers of nondurables. Large increases in foods, textiles, chemicals, and other nondurables were recorded as it became apparent that shortages were spreading to areas previously affected but little and that the upward pressure on prices was becoming more intense. Altogether, the value of inventories held by producers of nondurables rose more than 800 million dollars during the final quarter of 1941. For the year as a whole the index for nondurables advanced from 111 to 144 [average month, 1939=100].

Widespread protective buying coupled with slower advances in manufacturing production have thus strengthened the over-all inventory position of manufacturers. Wide variation exists among different industries, however. For example, the iron and steel and their products group increased shipments during 1941 with little change in inventories. Other industries, unable to expand shipments, continued to increase stocks. Large advances in the shipments of war industries kept their rapidly growing inventories closely in line with previously established patterns. But in the aggregate, the level of stocks with reference to shipments is now considerably higher than in the pattern exhibited prior to June.

Retail and wholesale inventories were discussed in some detail in the January issue of the Survey. Since then, the year-end census of independent retail stores conducted by the Department of Commerce has shown that total stocks reported by more than 8,000 stores in 34 States were 21 percent higher on December 31, 1941, than they were one year ago. Increases ranged from 8 percent in drug stores to 30 percent in the furniture, household, and radio group. Dealers in commodities for which demand has been particularly heavy such as hardware stores, and lumber and building materials made much less than average additions to stocks.

Construction

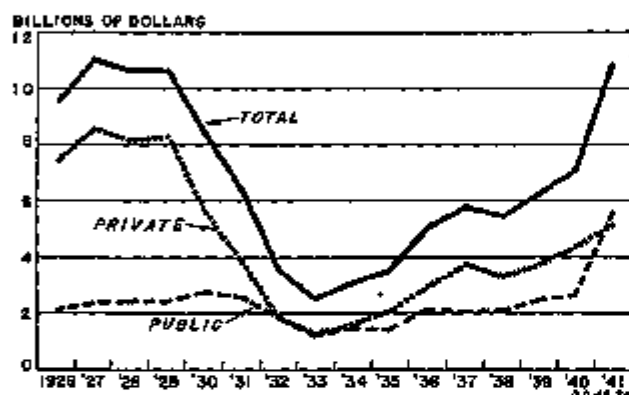
Relatively larger than the expansion of manufacturing was the advance in construction. Record capital formation created as a result of direct military requirements and the indirect stimulus of armament expenditures yielded a volume of construction in 1941 half again the size of that in 1940 and the largest for any year since 1928. Total expenditures on new construction are estimated to have been just under 11 billion dollars (see table 15 and figure 19).

A considerable part of the construction during the year, and all of the increase over 1940, was related to the war effort. The outlay on publicly-owned construction more than doubled that of the previous year, with most of the increase occurring in military facilities, war production plants, and housing in critical areas.

The total was well above any other year including those of the last war.

Through the final quarter of the year construction which did not meet war requirements suffered increasingly because of difficulty in obtaining essential materials. However, by the year end there had been little more than a seasonal decline in total construction activity. And war requirements suggested that, in spite of drastic curtailment of some types of projects because of the scarce material supplies, total expenditures on construction in 1942 would at least approach the 1941 level. Direct military construction is to be much heavier than last year, while the building of new plant should be reduced but little. In addition, con-

Figure 19.—Estimated Value of Total, Public, and Private New Construction



NOTE.—Data do not include work relief new construction for which separate figures are not available. Data for total work-relief construction are shown in Table 15, p. 36.

Source: U. S. Department of Commerce.

siderable activity in other fields, including residential building, is deemed essential to the war effort.

Residential Construction

Increased consumer purchasing power, the extraordinary growth in the number of new families, and extensive internal migration into war production areas, all combined to create during 1941 the heaviest demand for housing since the late twenties. Outlay on new nonfarm residential construction rose to 3.2 billion dollars, 25 percent in excess of that in 1940. The peak for housing expenditures was realized in 1926 with an outlay of 4.6 billion, while the low point in recent years was the 413-million-dollar expenditure in 1933. Altogether, work was started on 615,000 nonfarm dwelling units, 14 percent more than in 1940 and the largest number in 13 years.

As a matter of fact, the effective demand for housing was even greater than these figures indicated. The number of vacant dwellings declined markedly and for the country as a whole the vacancy ratio was reduced below what is usually considered normal. In many war production areas, of course, vacant dwelling units declined to an irreducible minimum. In addition,

conversion and rehabilitation of existing structures were undertaken to an unusual degree, while light house-keeping units, trailers, and other dwelling units not counted as new construction, appeared in large numbers within many critical areas.

The strength of the housing demand in 1941 is further emphasized when it is realized that the large gain occurred in the face of a substantial rise in costs. Building costs for a standard 6-room frame house, for example, rose 11 percent.

However, the increased level of income tended to offset the retarding influence of the cost advance, not only directly but also through various indirect effects. Thus, while the number of marriages in 1939 and 1940 was exceptionally high, favorable economic conditions and the war led to a further increase last year. Some of the war marriages of course did not create new households; nevertheless, the net increase in households probably exceeded the large number reported in each of the previous two years. Again, the increased income favored further "undoubling" where two or more families had been living as one household. No statistical measurement of this latter development exists, but evidence from many sources points to its having grown markedly last year.

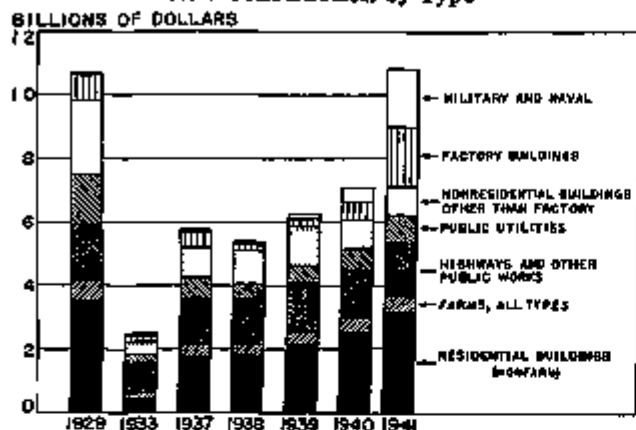
A good share of the increased residential building represented public construction. About half a billion dollars was spent on public housing in 1941, as compared with 200 million in 1940. Approximately one-third of the total represented a continuation of the slum clearance program. The balance of public building was required to meet housing shortages in critical areas of war production.

To assure an adequate program for this purpose, the President established a Coordinator of Defense Housing, whose duty it was to gauge the needs and arrange with the necessary authorities that the materials be made available and the actual construction be undertaken. For the most part the building itself was carried out by the various housing agencies under the Federal Works Administration. Altogether, 106,000 units were started and 65,000 units had been completed up to the end of 1941. One significant aspect of this program was the emphasis on demountable housing which served to encourage and develop prefabrication.

By the year end the outlook for housing during 1942 had been rendered very complex because of the growing shortage of raw materials, particularly metals. In mid-September, priority assistance for obtaining required materials was limited to those new housing units in critical areas which cost less than \$6,000. Inventories in the hands of building supply dealers were considerable, however, and construction of larger units remained in sizable volume. Building of this character cannot continue indefinitely; so most new residential construction in 1942 will of necessity have to fulfill priority specifications.

The total supply of scarce materials that would be allocated for housing purposes had not been determined at the year end. A figure of 300,000 units—200,000 privately owned and 100,000 publicly owned—

Figure 20.—Estimated Value of Public and Private New Construction by Type



Note—See note on Figure 19

Source: U. S. Department of Commerce

had been announced by priority authorities, but no specific time limit had been included. At the start of this year, applications had been approved covering all of the public and about half of the private quota. Applications were being received at a rate which would exhaust the balance of the quota before the end of the first quarter in 1942. At that time, the urgency of additional housing in critical areas will have to be weighed against other essential needs and the total residential building which must be undertaken in 1942 can then be determined.

In this regard, the heavy residential building last year was of particular importance, for on the whole it left the American people better housed than at any other time in the last decade. Only in areas requiring an influx of new labor will residential building be extensive. In all sections, the rise in the number of households normal in more usual times will be curtailed because of war service. At the same time, restrictions on new construction should again encourage a large amount of conversion and renovation of existing structures, as well as the increased use of light housekeeping quarters, trailers, and other alternatives to new building.

Industrial Construction

One of the most significant construction developments during 1941 was the increased building of manufacturing plant. The creation of a tremendous new armament industry, combined with a sizable expenditure on plant for civilian use, carried the total outlay to 1.9 billion dollars. This was more than double the 1929 peak and perhaps 3 times the volume realized in the high year of the last war.

As stated in the introductory section of this economic review, over half of the plant construction occurred in the direct armament industries, including the tremendous expansion of aircraft capacity, a more than tripling of the Nation's shipways, and the enormous growth in plant for turning out such commodities as tanks, guns, ammunition, and explosives. As a matter of fact, new armament plant constructed in 1941 was itself more than double the entire plant investment (not including machinery, of course) of the automobile industry

Table 15.—Construction Activity in the United States, by Function and Ownership¹
(Millions of dollars)

Item	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
Total construction (new, work relief, and maintenance).....	13,730	11,409	8,576	5,330	4,142	5,415	5,056	5,644	9,139	9,129	9,900	10,636	14,226
Private	10,534	7,701	5,323	2,912	2,283	2,782	2,491	2,430	4,630	4,604	5,069	5,368	7,212
Public	3,226	3,648	3,253	2,418	1,857	2,633	2,465	3,214	4,509	4,525	4,831	5,268	7,014
New construction	10,668	8,306	5,947	3,078	2,485	3,044	2,497	2,603	4,748	4,393	5,245	5,335	10,811
Private construction	8,287	5,821	3,770	1,784	1,269	1,538	1,048	1,089	2,710	2,306	2,744	2,744	5,236
Residential (nonfarm)	2,062	1,790	1,400	698	412	591	413	1,382	1,655	1,707	2,049	2,322	2,676
Nonresidential building	2,601	1,868	1,000	544	417	441	457	698	1,022	693	746	973	1,191
Commercial	1,187	968	582	263	128	157	196	255	360	202	204	347	388
Factory	830	519	214	83	128	173	190	284	609	191	220	441	611
Other nonresidential	588	467	250	220	104	117	113	176	170	224	247	217	242
Deduct: Nonresidential building by privately owned utilities	94	96	76	22	19	11	13	16	26	21	24	32	50
Farm construction	631	431	287	140	104	219	340	258	413	564	425	408	540
Public utility construction	1,503	1,512	947	462	245	307	325	454	820	992	627	645	890
Public construction	2,411	2,777	2,577	1,726	1,216	1,486	1,449	2,174	2,039	2,086	2,501	2,670	3,676
Highway	1,248	1,481	1,323	610	676	821	1,022	870	850	837	884	945	1,013
Residential	642	647	501	408	191	207	260	545	467	671	782	801	1,072
Nonresidential building	642	647	501	408	191	207	260	545	467	671	782	801	1,072
Commercial	642	647	501	408	191	207	260	545	467	671	782	801	1,072
Factory	642	647	501	408	191	207	260	545	467	671	782	801	1,072
Other nonresidential building	642	647	501	408	191	207	260	545	467	671	782	801	1,072
Military and naval	10	29	40	34	36	47	37	20	37	62	119	473	1,708
All other public construction	302	650	628	438	314	410	321	682	591	581	684	654	940
Work relief (new and maintenance)					114	578	406	1,130	775	1,202	1,032	606	913
Maintenance	3,112	3,011	2,329	1,752	1,543	1,793	2,063	2,469	2,610	2,635	2,683	2,740	2,901
Private	2,287	2,140	1,551	1,126	1,016	1,194	1,413	1,749	1,854	1,703	1,819	1,890	1,978
Public	816	871	778	626	527	599	650	719	756	772	864	850	923

¹ Approximately comparable data, beginning with 1918 are available in "Construction Activity in the United States, 1918-1937," Domestic Commerce Series No. 99.

² Preliminary estimates of the Bureau of Labor Statistics. Further revision, dependent on incorporation of final census data, is in progress.

³ Small but indeterminate amounts of public factory and commercial construction included under private construction prior to 1934.

⁴ Estimates of the Bureau of Agricultural Economics, include indeterminate amounts of maintenance.

⁵ 1930 and 1941 public factory figures include all Army and Navy warehouses not

a part of the cantonment program. Previous to 1930 all warehouses other than those constituting integral parts of factories were classed as commercial.

⁶ Includes cantonments, aeronautic facilities, navy yards and docks, Army and Navy hospitals, etc.

⁷ Includes construction expenditures for sewage disposal, water supply, conservation and development (chiefly rivers and harbors and reclamation), and miscellaneous public service enterprises.

Source: U. S. Department of Commerce.

Again, as suggested above, the rise of the armament industries made necessary a further growth of machinery and raw material output. Chemicals, iron and steel products, aluminum, and other nonferrous metals, were the materials undergoing the largest plant expansion as a result.

The extent of new plant classified as being chiefly for use in producing civilian goods is best indicated by the fact that despite increasing raw material shortages, the building of such plant was greater than in 1940. Nevertheless, this still constituted but one-fourth of the total plant construction in 1941. The food and kindred products, textile, pulp and paper, and automobile industries undertook the heaviest construction.

By the fourth quarter of the year, raw material shortages had limited both the need for civilian plant construction and the ability to carry it through. Priority assistance in obtaining either machinery or materials was formally denied those who sought to make such investment and building of that character was on the decline.

One development of significance was the huge plant construction carried out under the auspices of the Federal Government. Approximately two-thirds of the total industrial construction in 1941, including nine-tenths of the armament plant, was on Federal account.

Since the outset of the military program in the second quarter of 1940, new industrial construction has risen continuously. The annual rate at the earlier date was less than 400 million dollars; today it is more than 2 billion. Commitments already made at the time war was declared indicated that this pace would be continued at least into the second part of 1942, even though construction of other than war production plants had been virtually eliminated. Moreover, the enlarged arms program demands a further large increase in industrial capacity.

While much of the increased arms capacity is to be achieved in part through wholesale conversion of existing civilian plants, new construction also is to play an important role, both because new building is at times more rapid and because not a small part of the required plant is for the production of commodities that cannot be made in converted facilities. All in all, the necessary new steel, aluminum, magnesium, chemical, bomber, ordnance, and similar plants tend to substantiate a forecast that outlays in 1942 will rise above, rather than fall below, the current rate.

The same conclusion is expected in the case of certain types of public utility construction. In 1941 the total of this category advanced to 830 million dollars, up considerably from the 645 million of the previous year but still far below the volumes realized in the latter twenties. Railroad and electric power construction both were much heavier as increased demand incident to the broad industrial expansion required either an

enlarged capacity or extensive improvement of that already existing. A similar development may occur in 1943. Electric power plant, for example, is scheduled to undergo a record expansion. However, part of the new construction of utilities, as with manufacturing concerns, will be offset by deferment of maintenance and repair, required as a result of short material supplies.

Public Construction.

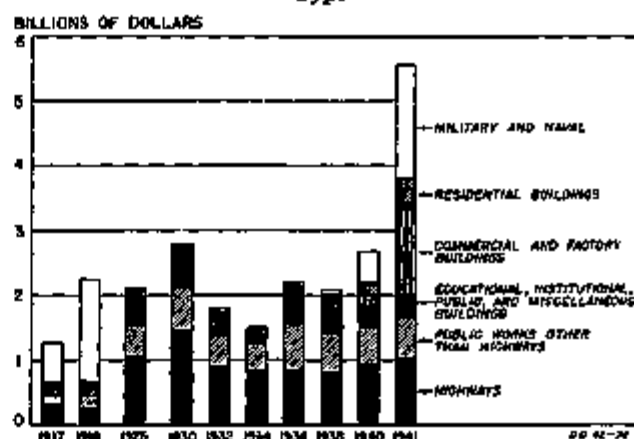
Public construction had been at an all-time peak in 1940, but it was more than doubled in 1941. Moreover, the total of 5.6 billion dollars was one and a half times the volume found necessary in 1918, the peak year of the war.

A number of developments, some of which already have been covered, were responsible for this sharp advance. The most important were the rise in factory building for public account, the very extensive military and naval construction, and the increased volume of public residential building. In addition, however, almost all other forms of public construction expanded. Outlay for new highways, for example, is estimated to have been slightly more than 1 billion dollars, 7 percent above 1940.

Heavy Military and Naval Construction.

One public construction category which assumed major proportions in 1941 was that which embraced the building of cantonments, air fields, naval bases, and other military facilities. Details on this construction

Figure 21.—Estimated Value of Public New Construction by Type



NOTE.—See note on Figure 19.

SOURCE: U. S. Department of Commerce.

are not available for publication. However, the total outlay within the continental United States itself jumped to approximately 1.8 billion dollars in 1941, as compared with 473 million in 1940. Even before the United States became directly involved in the war, projects had been scheduled that would more than maintain expenditure at the 1941 rate through the first half of 1942. Since then, of course, the program has been stepped up very markedly.

Rise in Construction Costs.

It was earlier pointed out that the huge advance in construction last year occurred in the face of a substantial increase in costs. The imperative nature of a large proportion of the demand, as well as the increased level of income, made cost conditions a factor of secondary importance in most instances, and the increase probably had but minor influence in retarding demand. Certainly of much greater importance in this instance was the prospective shortage of raw materials in the latter part of the year.

Quoted prices for building materials, as measured by the Bureau of Labor Statistics' index, rose 9 percent during 1941. According to indices compiled by the Engineering News-Record, the advance in construction wage rates within the year was 9 percent for common labor and 4 percent for skilled labor. As a result of these and other changes, the Home Loan Bank Board index of the cost of building a standard 6-room house rose 11 percent.

The rise in actual costs was probably higher than is indicated by these and other published data. For, in addition to the increase in quoted prices for building materials, there existed less than the usual amount of price undercutting, and some premiums were even paid to get scarce items. Moreover, fewer concessions from prevailing wage rates were obtained, and more extra pay for overtime was required. Finally, the problems and uncertainties of carrying through a large volume of construction in a war dislocated economy increased the contractor's overhead and administrative expenses, and required a larger margin for contingencies. In a "sellers' market," contractors, subcontractors, and others in the industry were able to mark up their prices accordingly. As the year ended, this general upward trend in costs was continuing.

Public Utilities**Electric Power**

The tremendous growth of industrial activity led to an unusual and record year for the electric power industry. Capacity, output, number of customers, revenue—all were the largest in the history of the industry. But, notwithstanding a very substantial installation of new generating capacity, as well as the construction of much interconnecting transmission line, power output within some regions proved inadequate to meet peak demands for the first time since the last war. Moreover, at the start of the new year, it was clear that shortages would become more widespread during 1942, although peak output was scheduled again to be stepped up markedly in almost all regions.

Sharp Advance in Industrial Sales.

Sales of electricity to ultimate customers rose 18 percent to a total of 140 billion kilowatt-hours in 1941.

By far the largest expansion (28 percent, and close to three-fourths of the total increase) represented purchases by large industrial plants, chiefly a reflection of the heavy industrial output. Newly constructed plants took a somewhat larger proportion of their power requirements from public utilities than did the rest of manufacturing on the average.

Sales to commercial and residential customers also moved forward. The former were up about 10 percent, a larger expansion than that which has occurred in the recent past. On the other hand, the 8-percent advance in sales to residential consumers was smaller than the average gain in the late thirties.

This latter development was not the result of a smaller addition to the number of residential customers. These showed the largest increase for the past 13 years, partly because of the large amount of housing for defense workers. However, the gain in the number of kilowatt-hours taken per customer was less than in recent years, rising only from 952 to 986. This was the case despite the fact that sales of electric appliances (chiefly responsible for increased household use of electricity) were the heaviest on record. For example, over 3.5 million refrigerators were purchased, as contrasted with 2.7 million a year earlier, while the sale of 664,000 ranges was 70 percent above the 1940 total.

The trend toward lower rates was continued throughout last year. But in the case of residential consumption, the decline was smaller than in previous years. Both the rate reductions and the more intensive use of electricity under graduated rate schedules, brought a decline in the average cost to residential customers from 8.84 cents a kilowatt-hour in 1940 to 3.73 cents a kilowatt-hour last year.

Table 16.—Revenue per Kilowatt-Hour of Electrical Energy Sold, by Consumer Classes, 1929-41
(Cents)

Year	Residential or domestic	Farm	Commercial and industrial		Total
			Small light and power	Large light and power	
1929	4.33	2.54	4.24	1.38	2.87
1930	4.03	2.61	4.15	1.41	2.65
1931	5.78	2.70	4.17	1.47	2.76
1932	5.90	2.08	4.14	1.55	2.55
1933	5.52	2.55	4.07	1.58	2.56
1934	5.33	2.05	3.99	1.55	2.53
1935	5.01	2.46	3.82	1.50	2.46
1936	4.67	2.77	3.60	1.19	2.27
1937	4.39	2.20	3.41	1.14	2.17
1938	4.14	2.47	3.30	1.20	2.30
1939	4.00	2.42	3.19	1.12	2.15
1940	3.84	2.48	3.08	1.05	2.05
1941	3.73	2.20	2.94	1.00	1.90

¹ Revised figures to conform with Uniform System of Accounts prescribed by the Federal Power Commission.

² Based on estimated sales for all farm service, under the system of accounts in effect beginning 1937, farm service is not reported as a separate class.

³ Data for 1941 are estimates.

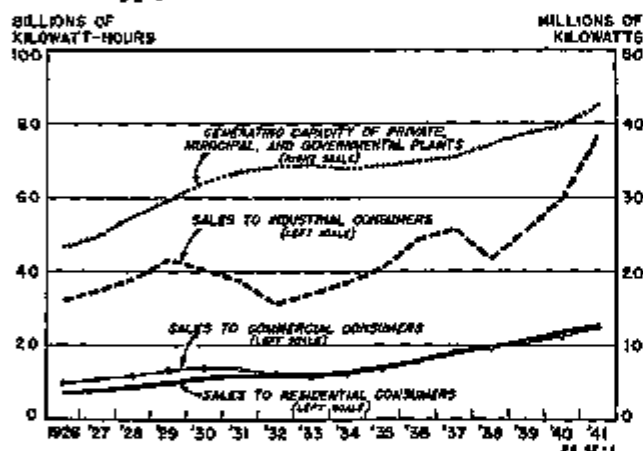
Source: Edison Electric Institute.

The magnitude of the increased demand for power varied widely from area to area, being particularly large in those regions heavily engaged in producing

commodities for military and capital use. Industries producing durable goods and chemicals require exceptionally large amounts of electric power. Moreover, in some cases, the yearly peak requirement was raised relative to that of any single month. Such important power consumers as the electrochemical and electro-metallurgical industries formerly used much secondary power, curtailing activity during periods of peak demand. Today, however, they maintain a continuous operation. On the average, power facilities were used more intensively last year, the kilowatt-hours generated per kilowatt of capacity advancing from 8,538 in 1940 to roughly 3,900 in 1941.

The effect of the new arms industries on power demand is well illustrated by the experience in the Pacific Northwest and the Tennessee Valley regions

Figure 22.—Kilowatt-Hour Sales of Electricity During the Year to Ultimate Consumers and Kilowatt Generating Capacity on December 31 of Plants Contributing to the Public Supply



Source: Edison Electric Institute

which have received large new aluminum, magnesium, and chemical plants. The peak requirements in the former section were 38 percent higher in November of last year than a year earlier. In the Tennessee Valley area, the gain was limited to 16 percent because of inability to fill all requirements. Drought conditions so lowered hydroelectric reserves in that region as to make necessary an informal rationing of available power supplies. Commercial and nonessential industrial uses were curtailed, and plans for the inauguration of power priorities throughout the entire section were formulated. However, a timely end to the drought indefinitely postponed the latter program.

Large Expansion of Capacity.

Peak requirements for the country as a whole occur in December. This past year they stood more than a tenth above those of December 1940. To meet such a demand, the utilities undertook one of the largest capacity expansions in their history. Altogether, 2,854,000 kilowatts of new generating capacity was installed

in 1941, only a very small part of this being for replacement. More than two-thirds of this was added by private electric utility companies, while approximately one-fourth represented new Federal plant, and the remaining small amount went into municipal utilities. At that, installations fell short of the total scheduled for the year because growing raw material shortages, as well as competition from shipbuilding and other industries, held back equipment production.

Table 17.—New Capacity Added, Capital Expenditures, and Security Issues by the Electric Power Industry, 1936-41

Year	Net addition to generating capacity (thousands of kilowatts)	Capital expenditures	Security issues ¹	
			New capital	Total
		Millions of dollars		
1936	490 0	289 7	59 7	1,331 9
1937	569 2	458 5	82 0	948 7
1938	1,307 7	482 0	123 1	984 0
1939	1,275 8	430 0	16 2	929 3
1940	1,321 0	608 8	82 4	999 2
1941	* 2,712 0	* 634 1	97 1	740 8

* Preliminary.
¹ Not including common-stock rights and warrants.
² Estimated on 10 months' operations.

Sources: Net addition to generating capacity is based on data published by the Edison Electric Institute; capital expenditures and security issues were compiled by the Electrical World.

Installations deferred until 1942 totaled some 600,000 kilowatts. There remain scheduled for installation during the current year, 3,655,000 kilowatts. Whether or not such a program can be fulfilled rests upon the allocation of raw materials and machinery producing capacity by the War Production Board.

Though the expansion in generating capacity was extremely large, it still was less than the increase in peak demand, a deficiency made up by drawing on existing reserves. In this regard, reserve requirements were decreased somewhat by construction of a large number of interconnecting transmission lines. For example, pooling arrangements in the Southeast area were effected to include utilities in 13 States from Ohio and Virginia to Florida and Louisiana. Thus, if necessary, power can be made available to the Southeast from the Middle West by displacement through a series of interconnections.

Railroads

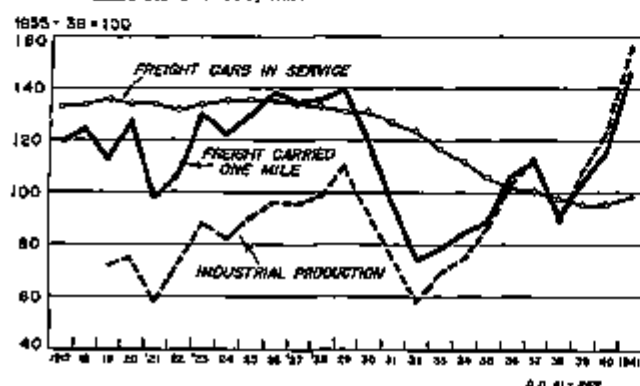
The railroads—a major industry whose operations consistently failed to recover substantially during the past decade—were called upon to move a volume of freight and passengers in 1941 that in many instances strained their existing equipment capacity. Indeed, at the peak period of freight traffic, the carriers achieved a record operating performance. One result of this heavy increase of business was a decided improvement in the carrier's financial position, net operating income approaching the level of 1929. At the year end, the railroads, like many other industries, found their

position transformed from one of insufficient demand to one requiring an expansion of existing facilities in order that traffic volumes expected in 1942 might be adequately handled. At the same time, however, the carrier's ability to obtain such equipment was severely limited by the great need for materials and labor on the part of the war production industries. It thus appeared necessary for the roads to achieve the most complete cooperation and coordination during this year in an effort to realize their utmost efficiency of operation.

Traffic and Earnings.

Carloads of railroad freight last year rose 16 percent over 1940, the total for the year reaching 42.3 million

Figure 23.—Indexes of Freight Carried One Mile, Freight Cars in Service, and Industrial Production.



Sources: Indexes of railroad statistics calculated from basic data for Class I Steam Railways, excluding switching and terminal companies, published by the Interstate Commerce Commission; index of Industrial Production, Board of Governors of the Federal Reserve System.

cars. Traffic attained peak proportions by the middle of June, and from that time to the end of October, omitting 2 holiday weeks in the intervening period, averaged 901,000 cars weekly. The volume in the highest week of the year (October 12-18) amounted to 923,000 cars, compared with 838,000 in 1940 and 856,000 in 1939.

The influence of the armament program was especially evident in the expansion of miscellaneous (manufactures), ore, coke, and forest product loadings. These rose 24 percent over 1940, in keeping with a 27-percent advance in industrial output and an increase of about one-fourth in construction. The groups showing smaller gains included agricultural products (up 6 percent), less-than-carload merchandise (up 5 percent—a substantial increase, however, for this sluggish group), and coal (up 11 percent).

The 16-percent rise in carloadings understated the expansion of freight traffic, however, for ton-miles of revenue freight increased by one-fourth, as the war program required that larger volumes of durable products be transported over longer distances. As a matter of fact, the ton-mileage for the year was the largest on record, as an abnormally high proportion of total traffic moved by main line between large centers of production.

Table 18.—Operating Revenues and Income, Fixed Charges, and Net Income, Class I Steam Railways (Excluding Switching and Terminal Companies), 1929-41

[Millions of dollars]					
Year	Gross operating revenues	Operating ratio	Net railway operating income	Fixed charges	Net income
1929	6,270.6	71.76	1,253.7	680.4	506.9
1930	5,281.2	74.43	858.9	671.0	187.9
1931	4,138.3	76.97	325.6	690.2	134.6
1932	3,126.8	76.87	328.3	654.1	43.2
1933	3,093.4	72.66	474.3	665.7	43.2
1934	3,271.6	74.64	402.7	655.1	43.2
1935	3,441.9	75.11	409.3	648.9	7.5
1936	4,002.7	72.88	607.3	633.6	104.0
1937	4,166.1	74.97	890.2	629.0	261.2
1938	3,665.6	76.36	872.9	614.4	258.5
1939	3,965.0	73.05	858.8	607.7	251.1
1940	4,296.0	71.90	632.1	606.6	25.5
1941	5,540.7	86.53	1,695.5	1,020.0	675.5

* Probable.

† Debit.

‡ Estimated.

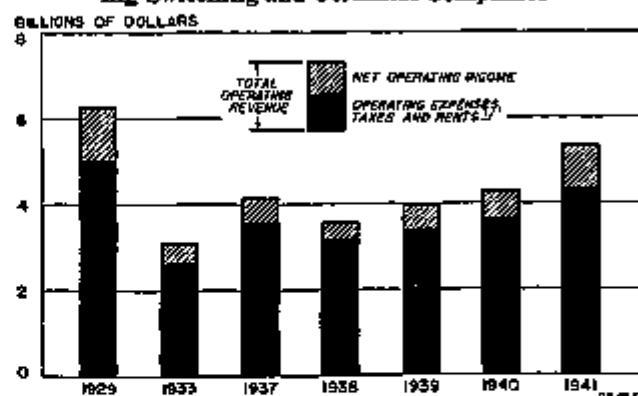
Sources: Interstate Commerce Commission and Association of American Railroads.

Freight revenues increased 25 percent, or about \$11 million dollars. The 1941 figure has been exceeded in only 6 other years (between 1923 and 1929) in railroad history. It was about \$380 million dollars under 1929. Revenue per carload advanced to 105 dollars, compared with 97 dollars in 1940, and 91 in 1929.

Although less important from a revenue standpoint, passenger traffic also rose sharply (22 percent) from 23.8 billion passenger-miles in 1940 to approximately 29 billions in 1941, only slightly below 1929. Much of the 1941 traffic gain consisted of troop movement and travel by armed personnel on leave. The increase for the year in passenger revenues approximated 100 million dollars.

Characteristically for the railroads which have a large proportion of costs that remain relatively stable as operations increase or decrease, costs advanced less

Figure 24.—Financial Operations of Class I Railways, excluding Switching and Terminal Companies



† Repts represent the consolidated net balance of equipment and joint-trailway rentals.

Source: Interstate Commerce Commission.

than revenues, as shown in table 18. Aggregate operating revenues rose by nearly one-quarter (1,050 million dollars), but operating expenses absorbed only somewhat more than half of this gain (570 million dollars), as the operating ratio declined to the lowest level since 1916. Net railway operating income, after the increase

of 155 million dollars in tax accruals, rose 317 million to 1 billion, the best figure since 1929. The railroads' net income, allowing for fixed charges and the receipt of other income, was about 500 million dollars, approaching that of 1930.

Late in the year, wage rates paid railroad workers were advanced by an amount which has been estimated to approximate 332 million dollars annually at the 1941 employment levels. To offset this and other anticipated cost increases, the railroads petitioned the Interstate Commerce Commission to raise most passenger and freight rates an average of 10 percent, or about 500 million dollars on the basis of revenues received in 1941.

Equipment Supply Increased.

In order to cope with heavier traffic demands, the railroads have added to their supplies of freight cars during the past two years, as shown in table 19. Serviceable freight cars (railroad-owned) available last October 1, as reported by the Association of American Railroads, numbered 1,602,600, in comparison with 1,510,500, 12 months previous, and 1,449,000 on October 1, 1939. By the first of the current year, the serviceable supply approximated 1,631,800. During 1941, the railroads reported 80,500 freight cars put in service, about 15,000 more than in 1940 and the

operations, declined to the unprecedented level of about 41,000 during the carloading peak last September and October. Recognizing the urgent need for more freight equipment, the railroads placed orders totaling 74,900 at the year end for new cars to be delivered, if possible before next October.

A similar tight situation prevails in the case of motive power. Although 161 steam locomotives and 472 of other types were put in service during 1941, the reserve supply stored in operating condition fell to low levels during peak traffic periods. In the closing months of the year, for example, it was 5 percent or less of serviceable units in the case of steam freight locomotives. At the end of December, the railroads had orders outstanding for 546 additional, including 258 steam locomotives.

The problem of railroad equipment production this year will continue to be material shortages. However, priorities are being granted railroad equipment shops assuring materials for the building of a total of 36,000 new freight cars in the months, February through April, together with supplies needed in that period for locomotives ordered and under construction.

Shipping

The year 1941 was one of intense activity for American shipping. The unprecedented need for raw materials created as a result of record industrial output and the stockpiling program, required the employment in import trade of a much larger tonnage volume than had been used in recent years. At the same time, exports to the British Empire and Egypt—in some cases not matched by an equivalent import—also employed an extremely large tonnage.

Much of the shipping to the United Kingdom had to be handled by British and Allied bottoms, for until its revision in November, the Neutrality Act barred American tonnage from combat zones. This trade, along with other war needs, made it necessary for British bottoms to continue to withdraw from their normal berths in the Pacific, thus creating a further shift in the disposition of American shipping by increasing its load throughout that whole far-flung area.

Indeed, because of interrelationship of British and American shipping requirements, it is impossible to consider the problems of the one merchant fleet as being entirely separate from those of the other. Thus, the losses from enemy action suffered by English shipping in 1940 and 1941 were generally reflected in the requirements made upon American tonnage.

Within the year, the above factors created a need for shipping that could not be completely and readily satisfied by American and foreign trade. Hence, after the first quarter with shipping facilities increasingly scarce, Government intervention was required to assure the most efficient and desirable use of the available tonnage.

Table 19.—Equipment Expenditures and Freight Equipment, Class I Steam Railways (Excluding Switching and Terminal Companies), 1929-41

Year	Equipment expenditures (millions of dollars)		Freight equipment		
	Maintenance	Ordered from manufacturers	Steam locomotives in service Dec. 31	Cars in service Dec. 31	New cars installed
1929	1,202.8	387.1	37,035	2,305,824	34,894
1930	1,019.3	140.5	32,900	2,305,761	76,909
1931	817.0	28.9	32,093	2,228,846	12,683
1932	612.9	3.0	31,197	2,172,414	2,808
1933	596.7	6.9	29,335	2,061,331	1,879
1934	637.9	66.9	28,370	1,908,872	34,103
1935	621.9	35.7	27,452	1,826,045	8,903
1936	782.0	222.0	26,593	1,781,217	43,941
1937	820.7	173.2	26,517	1,708,512	75,086
1938	678.5	74.0	25,936	1,721,098	18,517
1939	708.0	189.3	25,038	1,671,712	24,526
1940	819.0	261.1	24,482	1,675,080	65,515
1941	992.8	428.6	24,230	1,736,000	80,500

¹ Estimated by Railway Age

² Estimated

Sources: Interstate Commerce Commission, Association of American Railroads, and Railway Age

largest number installed on Class I lines in any year since 1929. Intensive efforts to repair and rehabilitate unserviceable units, moreover, brought the "bad order" figure down to 4 percent at the year end, probably near the minimum except as additional "bad order" cars may be scrapped.

Despite successful efforts to facilitate the handling of the mounting traffic load, the surplus of serviceable freight cars not engaged at the time in carloading

To this end, Congress passed the Ship Warrants Act in July. This provided that American or foreign ships which served approved trade routes, carried vital cargoes, and charged reasonable freight rates, would be issued warrants granting preference in loading, discharging, lightering or storing of cargo, procurement of bunker oil and coal, towing, dry-docking and repairs. The Maritime Commission, in administering this act, was thus able to give effect to shipping priorities as needed.

Active Merchant Marine Little Changed in Size.

The United States Merchant Marine available to meet its share of the pressing demands outlined above totaled approximately 6,700,000 gross tons toward the end of 1941, about the equivalent size of that at the outset of war in 1939. This was the case despite a decline in the laid-up tonnage from 1,450,000 gross tons in September 1939 to 139,000 tons in September 1941; and the completion of construction of 1,038,000 gross tons during the same period.

Table 29.—American Steam and Motor Merchant Vessels of 1,000 Gross Tons and Over, September 30, 1939 and 1941¹

Service	Sept 30, 1939	Sept 30, 1941	Percent change in tonnage
	Thousands of gross tons		
Foreign.....	2,248	3,385	+51
Coastwise.....	3,402	3,036	-11
Intercoastal.....	1,068	326	-70
Special service (Government).....	8	23	+306
Laid-up.....	1,451	139	-91
Total.....	8,177	6,920	-15

¹ Excluding Lake and River tonnage.
Source: U. S. Maritime Commission.

These latter changes, which ordinarily would have expanded the active merchant fleet, were offset by two developments. A very substantial number of ships were transferred to British and other foreign registers. United States ships desiring to operate in belligerent areas, for example, often transferred to the registry of Panama. At the same time, the Army and the Navy acquired a considerable number of merchant ships for their own use, particularly those built under government subsidy programs in recent years. By September, a total of 1,250,000 tons had been shifted to the armed forces.

Of course, the outbreak of war in December operated to reduce the size of the active merchant marine as the Army and Navy took over additional tonnage.

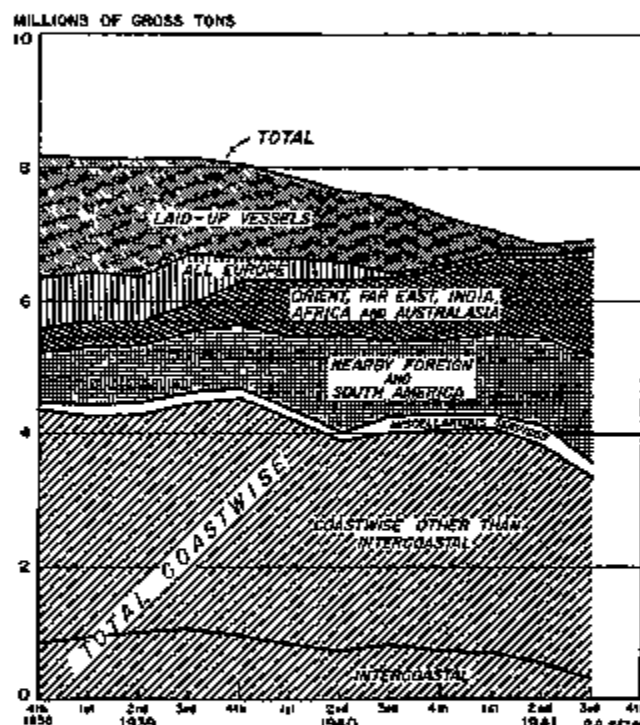
Shift in Trade Routes.

A shift in the trade routes upon which the American Merchant Marine was employed first appeared in 1940. The trends then established were largely continued throughout the first 3 quarters of 1941. But repeal of the arms embargo early in November and the outbreak of war in December undoubtedly brought some modi-

fication, though data are not publicly available to indicate the extent of the change.

In general, tonnage employed in moving goods to and from Europe (including the British Isles) had declined very markedly by the end of 1940. This trend was continued through the early part of 1941, though some ships eventually were made available to the British by this country. On the other hand, the increase in tonnage employed to South America, Africa, and the Far East, was further extended throughout last year. In part, this latter movement was

Figure 25.—American-Owned (Government and Private) Steam and Motor Merchant Vessels of 1,000 Gross Tons and Over Engaged in or Assigned to Ocean Trade



NOTE.—Data do not include lake or river tonnage or the tonnage of vessels transferred and chartered to the War and Navy Departments. Vessels operating in two or more trade services are assigned to the service in which the largest portion of operation was performed during the three month period. "Nearby Foreign" includes Canada, Mexico, Central America, West Indies, and the north coast of South America to and including the Guianas. "Miscellaneous Services" includes around the world, foreign trading foreign (ships engaged in operations between foreign ports), special service (in custody of the U. S. Coast Guard), and Government service (loaned to the War Department).

Source: U. S. Maritime Commission.

made possible through withdrawing ships from coastwise and intercoastal routes and adding them to the foreign service. The foreign service tonnage was expanded 51 percent in the 2 years ending September 30, 1941, to a total of 3,385,000 gross tons. The heaviest decline appeared on intercoastal routes, the million tons employed in September 1939 having been cut two-thirds by September 1941. Early in 1942, intercoastal trade was eliminated altogether.

The addition of newly constructed ships also expanded the tonnage in foreign service, though not a small part of the new merchant tonnage in 1941 went to the armed forces, and some went to Great Britain.

The vast shipping program undertaken in this country is set forth in more detail in the section on industrial production. Suffice it to repeat here that the 1941 output of approximately 750,000 gross tons, while almost double that in 1940, was little more than an eighth of what the President had requested for 1942. The program as it existed in the beginning of this year called for production at an annual rate of 10 million gross tons by the final quarter. Output in the final quarter of 1941 was at an annual rate in excess of 1.1 million gross tons, but this figure is misleading as the production in new facilities was so timed as to result in a very large increase at the first of 1942.

Maximum Freight and Cargo Rates Established.

Freight and charter rates had reacted strongly to the heavier shipping demand and increased costs during 1940 and early in 1941. However, passage of the Ship Warrants Act in mid-1941 provided the Maritime Commission with the means of setting maximum charges.

This the Commission proceeded to do in the case of charter rates for both cargo vessels and tankers. The latest revision—effective as of January 20, 1942—provided for a material reduction. Whereas the maximum time charter rates previously in effect were based on \$4.50 per deadweight ton (with variations for different weights and speeds), the new scale is based on \$3.25 per deadweight ton.

Moreover, in order that freight rates might conform approximately with time charter rates, all ocean freight rates, save those recently approved by the Maritime Commission and those under the jurisdiction of the Interstate Commerce Commission, were ordered to be adjusted to the rate level existing as of September 1,

1940. However, provision was made for the addition of surcharges, where required, to cover increased operating expenses which could be shown to have occurred since that date. Some idea of a shift in freight rates may be obtained from the illustrations presented in table 21.

Motor and Air Transportation

Operations of motortruck carriers reached record volumes in 1941 in response to huge transport demands generated by war expansion. Tonnage of revenue freight transported by class I intercity carriers during the first 6 months of the year exceeded that of the comparable 1940 period by 30 percent. The strong secular growth of the trucking industry continued during this period of rapid growth in general traffic, the rise in truck tonnage comparing with an increase of less than 20 percent in railroad carloadings. The industry thus made a large contribution toward the over-all success of the Nation's transport system during the year. About equal gains were reported for intercity and local carriers. Half-year operating revenues of intercity carriers were 30 percent higher than in 1940, while those of local carriers were up 27 percent.

Class I motor carriers of passengers reported an increase of 30 percent in revenues and of 33 percent in the number of passengers carried for the first 10 months of 1941 over the corresponding period of 1940. Travel to and from Army cantonments and the internal migration attending the establishment of new defense centers is clearly reflected in the statistics by regions. The southern region, for example, registered an increase of 37 percent in operating revenues for the first half of 1941 over 1940, compared with an increase of 22 percent for the Nation as a whole. Similarly, the southwest

Table 21.—Ocean Freight Rates in United States Foreign Trade

Export shipments		Commodity	Basis	Rates (dollars)			Percent increase Dec 1941 over Aug 1939
Destination	Origin			August 1939	December 1940	December 1941	
Buenos Aires (Argentina)	Pacific ports	Canned goods	12,000 lb.	18 00	20 00	25 00	38 0
Rio de Janeiro (Brazil)	Atlantic ports	Automobiles (boxed)	40 cu. ft.	9 00	12 00	12 00	33 3
Valparaiso (Chile)	do.	Iron and steel (bars)	2,240 lb.	7 00	11 20	11 20	60 0
Lyons (Spain)	do.	Canned goods	2,240 lb.	7 75	1 50	1 50	100 0
Capo Town (South Africa)	Gulf ports	Lumber and timber	100 lb.	12 00	40 00	45 00	275 0
Shanghai (China)	Atlantic ports	Tobacco	2,000 lb.	17 00	25 00	30 00	76 5
Import shipments		Commodity	Basis	Rates (dollars)			Percent increase Dec 1941 over Aug 1939
Origin	Destination			August 1939	December 1940	December 1941	
Santos (Brazil)	Atlantic ports	Coffee	Bags (60 kilograms)	40	70	1 00	150 0
Buenos Aires (Argentina)	do.	Lansed	Long tons	1 75	11 00	22 00	252 6
Puerto de la Cruz (Venezuela)	do.	Petroleum (crude)	Barrel	12	4 50	3 45	230 8
Singapore (Straits Settlements)	do.	Tin	20 cwt.	25 00	30 00	1 45 00	30 0
Soerabaya (Netherlands East Indies)	do.	Rubber	20 cwt.	16 50	15 50	1 10 00	81 0
Calcutta (India)	do.	Burkap	112 lb.	1 77	20 00	25 00	420 0
Hong Kong (China)	Pacific ports	Tung oil	2,000 lb.	10 00	14 00	20 00	100 0
			40 cu. ft.	15 00	25 00	32 00	113 3

¹ Rates as of Mar. 1, 1941

² Rates as of Apr. 1, 1941

³ Rates as of Feb. 1, 1941

⁴ August 1940, 20 cents per barrel

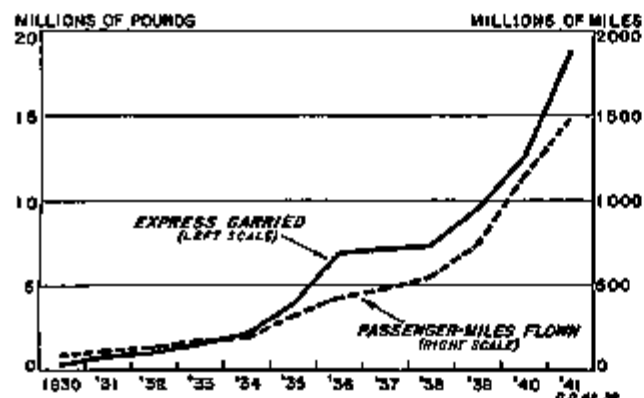
⁵ Rates for previous months varied from 40 cents to 50 cents per barrel

⁶ Rates for September 1939

region scored the much larger than average gain of 34 percent.

Air transportation taxed the available resources of the industry to the full during the year. Express carried exceeded the 1940 total by almost 54 percent and reached a new record volume of 2 million pounds at the seasonal peak in September. More than 4 million passengers were carried during the year as passenger-miles flown exceeded the 1940 total by almost 38 percent. Even these gains were less than those which

Figure 26.—Passenger-Miles Flown and Express Carried by Scheduled Airlines in the Continental United States



Source: All data except December (included in the annual totals for 1941), U. S. Department of Commerce, Civil Aeronautics Administration, figures for December 1941, estimated by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

would have been possible, however, had the airlines had sufficient equipment. The war demands on aircraft production limited the ability of private lines to obtain needed equipment very seriously.

Communications

A 1941 increase of nearly 2 million telephones over the number in use at the end of 1940 is indicated by reports filed by large carriers with the Federal Communications Commission. This increase—the largest ever recorded—brings the estimated number of telephones in service in the United States to well over 21 million. Operating revenues of 94 major carriers for the first 11 months of 1941 amounted to 1,305 million dollars, an increase of 10 percent over the comparable period last year.

Widespread improvement in general business conditions was fully reflected in operations of the telegraph industry during the year. From an approximately break-even point in 1940, the industry moved to a substantial over-all profit for the first time since 1936.

Operating revenues of the three telegraph carriers reporting to the Federal Communications Commission amounted to 123 million dollars for the first 11 months of 1941 compared with 109 million in the corresponding period of 1940. Operating income was up more than 55 percent and resulted in a net income total of 3.9 million dollars for the 11-month period compared with

a deficit of 59 thousand dollars in 1940. Duplication of services and excess facilities still prevail in the industry with only one of the two major carriers showing a profit for the year. Postal Telegraph continued at a deficit while net income for Western Union amounted to more than 6 million dollars during the period.

(Thousands of dollars)

Year	Operating revenues	Operating income	Net income
1939	116,537	3,897	4,706
1940	109,395	5,400	489
1941	123,883	8,496	3,836

* Deficit. † 11 months total.

Source: Federal Communications Commission

Employment and Working Conditions

The problem of unemployment—perhaps the most serious facing the economy for the last 11 years—was largely dissipated in 1941. Under the tremendous demand generated by the war program and the consequent rise in consumption, employment rose during the year by approximately 3 millions, causing unemployment (as measured by the Work Projects Administration) to be reduced to less than 4 million.

At the same time, the real income of the individual worker expanded despite higher living costs. Average hours worked per week were higher, while wage rates rose to an unusual degree. This latter development was accompanied by a marked increase in the number of industrial disputes.

At the year end, it was clear that the task of putting the total labor force to work was to be superseded by the problem of finding sufficient labor for the work to be done. The arms program of 1942 and 1943, plus the expansion of the armed forces, is expected to tax the labor force to the utmost. Meanwhile, an even more pressing problem is the training of workers for the large variety of skilled jobs required by an armament economy. In this regard, the experience gained in 1941 was expected to be of material benefit.

Large Increase in Manufacturing Employment.

Altogether, total employment (excluding the armed forces) rose to a level of 49.5 millions in December 1941. Wage and salary employment in civil nonagricultural establishments (see table 22) increased about 2.8 millions, to a total of 34.8 millions in December. The larger output of agricultural commodities in 1941 was achieved without appreciable increase in the number of farm workers.

Manufacturing establishments added the largest number of workers during the year, such employment increasing about 1.6 millions. Durable goods industries accounted for 1 million additional wage earners with particularly heavy gains reported in the war industries,

including machinery. However, the increase in employment reported by other lines was also sizable, as is shown in table 22.

Virtually all of the rise in employment was realized during the first 9 months, the only notable increases in the final quarter occurring in trade lines (chiefly a seasonal movement) and in the Federal civilian personnel. Indeed, when viewed in the aggregate, the movement of employment subsequent to September would appear to have been largely seasonal in character, except as construction declined less than expected on a seasonal basis. During the fourth quarter, durable goods manufacturing industries added only about 70,000 wage earners, whereas in the preceding 3 quarters an additional 940,000 workers had been placed on the pay rolls.

Table 22.—Estimated Employees of Civil Nonagricultural Establishments

(Thousands)

Group	Number employed		Change in number employed during period		
	Dec 1940	Dec 1941	Dec 1940 to Sept 1941	Sept 1941 to Dec 1941	Dec 1940 to Dec 1941
Employees of civil nonagricultural establishments ¹	32,016	34,787	+2,547	+222	+2,779
Manufacturing	11,427	12,703	+1,049	-72	+1,076
Mining	856	907	+61	+1	+62
Contract construction	1,720	1,820	+216	-116	+300
Transportation and public utilities	3,039	3,287	+328	-80	+248
Trade	7,247	7,603	+238	+195	+433
Finance, services, and miscellaneous	4,099	4,223	+226	-102	+124
Federal, State, and local governments ²	3,991	4,354	+317	+106	+423

¹ Excluding persons employed on W. P. A. or N. Y. A. projects, and enrollees in C. C. camps.

Source: U. S. Department of Labor.

This decline in the rate of increase in employment has been explained above as resulting from shortages in key raw materials which made rapid expansion in output impossible to achieve. Nevertheless, widespread changes were occurring in the pattern of employment during this whole period. Production of finished armament and commodities necessary for the essential capital formation connected with the armament program continued to increase, while the output of a number of consumer durable goods declined markedly. These changes were, of course, reflected in the employment statistics, though the decline in employment in most instances was not in proportion to the reduction of output. For example, in the automobile industry, despite a substantial reduction in production employment was maintained at a fairly high level by means of staggering work.

The extent to which employment continued to shift to war production is revealed in table 23. In the fourth quarter, a total of 5.3 million workers (including those in all stages of production) are estimated to have

been working on war output; whereas, the third-quarter average was placed at 3.8 millions.

As compared with the fourth quarter of 1940, war employment a year later had increased more than 3 times. Most of the advance was in manufacturing, where in the final quarter some 3.8 million laborers, or about three-tenths of total manufacturing employment, were engaged on war work. The largest proportion of the total labor force in any one general category devoted to the war effort was in construction. In the final months of the year 800 thousand out of a total of 1.9 millions of such workers were employed on war projects.

Table 23.—Estimated Employment in War and Civilian Production

(Quarterly averages, in millions)

Group	1941		
	Fourth quarter	Third quarter	Fourth quarter ¹
Employees of civil nonagricultural establishments	31.6	34.2	34.7
War goods and services ²	1.5	3.8	5.3
Manufacturing	0.9	2.8	3.8
Construction	0.4	0.7	0.9
Other	0.2	0.3	0.7
Civilian goods and services	30.1	30.4	29.4
Manufacturing	10.9	10.2	9.2
Construction	1.3	1.2	1.1
Other	18.4	19.0	19.1

¹ Preliminary.

² These estimates represent the employees in all branches of industry except agriculture, and in government exclusive of the armed services, who contribute directly or indirectly to war output. Besides employment in aircraft factories, shipyards and other war plants, in war construction, and in the creation of industrial facilities utilized in war production, the estimates cover the production of raw materials (except agricultural materials), semi-finished goods, power and other supplies for war output, together with the transportation, storing and other servicing of war materials, equipment and facilities.

³ Including employees in public shipyards, arsenals, and manufacturing depots.

Source: U. S. Department of Labor.

Employment developments in the last quarter of 1941 were indicative of the vast transformation of civilian workers into war workers that will be carried forward this year in pursuance of the War Program. The diversion of products and services from civilian to military uses, as one means of effecting such transformation, will greatly increase. Civilian plants are to be converted, together with their working forces, to war output. A host of workers will be employed in war plants now being rushed to completion, and others will be built. Still more workers will be needed to increase second, third, and rotating (or relief) shifts, in order to accomplish uninterrupted operation of both new and converted war plants.

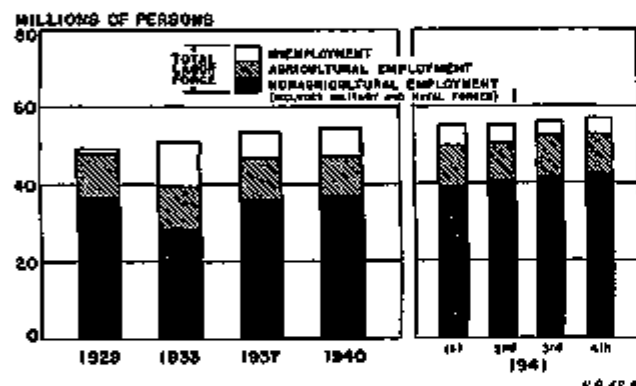
The Bureau of Labor Statistics has estimated that employment in the production of war goods and services will need to approximate 15 millions by the fourth quarter of this year. Combined war and civilian production at that time will require, it is indicated, an increase of about 1.9 million workers in manufacturing and mining over the December 1941 total of 13.9 millions. Other increases aggregating about 400,000 will also be required in construction, transportation,

public utilities, the service industries, and in government personnel. These estimates allow for the civilian curtailment necessary to divert materials and convert plants to war output.

As a partial offset to the increased employment requirements reviewed above, a reduction of more than 500,000 is believed probable in trade employment. A decline of 500,000 to 1 million may also occur during the year in other employment (approximating 14.7 millions—not shown in tables 22 and 23) comprising farm workers and the nonagricultural group that includes proprietors and firm members, self-employed persons, casual workers, and those in domestic service.

Notwithstanding these offsets, with the continued increase in the armed services, the combined additional demands upon the Nation's labor force this year may

Figure 27.—Estimated Nonagricultural and Agricultural Employment and Unemployment



Sources: Nonagricultural Employment, U. S. Department of Labor; Agricultural Employment, U. S. Department of Agriculture; Unemployment, U. S. Department of Commerce. The quarterly data for 1941 for Nonagricultural Employment have been adjusted for seasonal variations by the Board of Governors of the Federal Reserve System and for Agricultural Employment and Unemployment by the U. S. Department of Commerce.

approach 3.5 millions. Looking forward to 1943, as employment in war production next year advances and the armed services presumably are expanded further, another substantial increase in requirements is anticipated.

The Nation's reserves to meet these labor needs include, first, about 4 million unemployed workers. The natural increase in the population of working age, moreover, will approximate 1.1 millions annually. Under normal conditions, about 500,000 of these would not enter the labor force or would retire from it, but this proportion may be reduced by the unusual labor requirements in prospect. In addition, considerable numbers of the nonworkers shown in table 24 probably can be induced to join the labor force. Labor reserves, it will be noted, consist very largely of women. A higher proportion than at present of women, drawn both from the unemployed and from nonworker groups, evidently will need to be employed during the war period.

Table 24.—Estimated Unemployed and Nonworkers, December 1941

(In millions)

Group	Total	Male	Female
Unemployed workers	3.8	2.8	1.2
All nonworkers ¹	45.9	23.3	22.6
Home housework	30.0	1.1	28.9
In school	9.0	4.5	4.5
Overage and unable to work	5.7	3.1	2.6
Other	1.2	0.6	0.6

¹ Estimated number of persons—exclusive of those in institutions—14 years of age and older in the continental United States who were not in the labor force or in the armed services. The labor force comprises both employed and unemployed workers. Source: Work Projects Administration.

Labor Training and Migration.

In order to overcome possible labor shortages in this and the ensuing year, the Nation's labor reserves must be effectively translated into qualified workers employed where they are needed most, and the task appears so tremendous as to represent virtual mobilization of labor. To provide workers for war production will mean the placement of over 6 millions during the coming year, and probably as many more in 1943. Vast numbers will require intensive training to fill war production jobs, even though war industries are granted priorities to obtain the necessary skills, as well as to shift onto civilian industries as much as possible of the burden of absorbing new and inexperienced workers.

Nor does responsibility for labor supply stop with the war industries, for the maintenance of reduced civilian output at the best levels permitted by available plant capacities and material supplies will be as essential to the war effort. Labor training is indicated, therefore, on a scale far surpassing the very creditable accomplishments of the past year, when several million workers were enrolled in training programs, most of them within industry itself. The necessary mobility of labor, besides extensive training, will also involve the movement of workers and family groups between localities in unprecedented numbers.

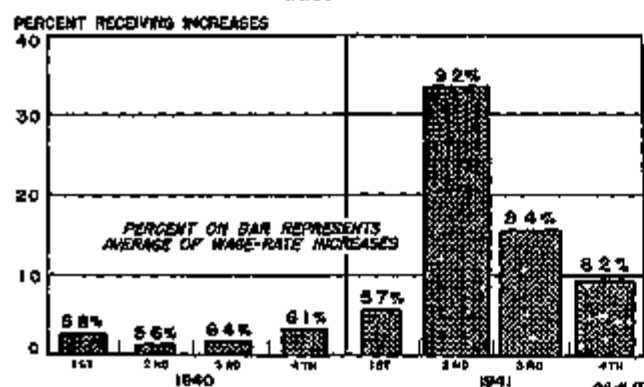
Hours and Earnings

The labor requirements of factory production increased about one-fifth over the past 12 months. Besides employing 15 percent more workers, these requirements were also met by working longer hours. The average for all factory wage earners increased about 5 percent (2 hours). Since June, the average work week appears to have been stabilized around 41 hours. Included within this average, however, overtime up to 50 hours has for many months been a feature of such durable goods industries as iron and steel forgings, foundry and machine-shop products, machine tools, engines and turbines, aircraft, and shipbuilding. Although longer work hours may frequently be necessary to carry out the War Program, extremes of overtime generally reflect the failure to

adapt production methods to the labor skills available (though this is not always possible), inadequate plant, industry, or local training programs, or reluctance to adopt multiple-shift operations—all largely dependent during the past year upon individual management initiative.

High operating rates, greatly improved business profits, and the active demand for labor, coupled with the rising cost of living, provided the basis for the large volume of industrial disputes during 1941. These were concerned chiefly with wage advances. Recognition and union security were also important issues though less so than in other recent years. Strikers' idle time more than tripled for the year as a whole, compared with 1940, but amounted in the aggregate to approximately one-third of 1 percent of the total

Figure 28.—Wage-Rate Increases in Manufacturing Industries



NOTE.—The height of each bar represents the percent of workers receiving wage-rate increases, as reported for the sample of manufacturing employees in the monthly employment and pay roll survey of the U. S. Bureau of Labor Statistics. The width of each bar represents the average percentage increase in the wage rates of those workers receiving advances.

Source: U. S. Department of Labor

available work time. Industrial stoppages declined sharply to low levels at the year end, however, as emphasis was placed on the avoidance of strikes and plans were adopted for a War Labor Board to determine contested issues.

Manufacturing pay rolls rose throughout the year, and by December were nearly two-fifths above the level of 12 months previous. The expansion in employment and increase in the average hours worked per employee accounted for somewhat more than half of this rise. Several factors are important in explaining the greater increase in pay rolls than in man-hours. Over two-thirds of the expansion in man-hours occurred in the durable goods industries, which normally pay above average wage rates. Overtime, also concentrated in the durable goods industries, involved, of course, the payment of premiums over straight-time rates. Many workers, moreover, were upgraded to more difficult jobs, and to correspondingly higher compensation.

Wage advances, the result of economic conditions

broadly favorable to higher pay rates, also contributed importantly to the larger labor returns. As indicated by figure 28, the increase in wage rates became general during the last 9 months of the year as about three-fifths of the workers engaged in manufacturing received an average advance of 8.8 percent. In December, railroad labor was awarded an average pay increase (made retroactive in part to September) of 18.9 percent.

Altogether, the average pay envelope in the manufacturing industries was 20 percent larger compared with the previous December, but only half of this represented a gain in real income, because of the 10-percent rise in the cost of living.

International Trade and Finance

As with other aspects of the Nation's economic life, the international trade and financial position of the United States during 1941 was determined chiefly by the country's transition to a more complete war economy.

(1) On the basis of statistics covering the first 11 months, imports increased sharply in 1941, compared with the preceding year, while the rise in exports was of still greater magnitude, leaving an excess of exports somewhat larger than in 1940. This excess was very different in significance from the familiar export surplus of pre-war years, however, and the ability of foreign countries to pay for the excess became a question of diminishing importance after the lend-lease arrangement was established.

(2) The inflow of capital from abroad into the United States, which had proceeded with only slight interruption since 1934, gave way to a capital outflow in 1941. The net movement was small compared with the massive capital transfers of other recent years, but by the end of 1941 the special type of "capital export" represented by lend-lease assistance to other countries had begun to assume substantial proportions.

(3) Imports of gold, which had been carried to ever higher records by the flow of capital to this country, declined materially in 1941.

(4) Government control of foreign trade and other transactions, initiated in 1940, was greatly intensified in 1941, as old measures were strengthened and new measures were adopted. By the time of the Japanese attack on Pearl Harbor on December 7, the machinery of economic warfare and control left little to be added.

Merchandise Trade

Continued Expansion in Foreign Trade

United States foreign trade, dominated by war conditions, showed a further substantial increase in 1941 following that which had already occurred in 1940. Trade statistics for the last month of 1941 had not yet been released at the time of this writing, but it is

unlikely that they would materially alter the general picture provided by the figures for the first 11 months, during which exports totaled \$4,492,000,000 and imports \$3,002,000,000. Exports increased by \$789,000,000 and \$1,683,000,000 compared with the corresponding periods in 1940 and 1939, respectively, while imports rose by \$630,000,000 and \$931,000,000 on the same basis of comparison.

The upward movement in exports became particularly marked in the latter part of 1941, the monthly average rising from \$348,000,000 in the first half of the year to more than \$400,000,000 in the July-November period. During the first 6 months the rise in imports—which hitherto had reacted relatively slowly to the war—tended to keep pace with or even exceed the increase in exports. The rapid acceleration in outward shipments during the latter part of the year, however, carried the export surplus for the full 11 months to \$1,490,000,000, compared with \$1,331,000,000 and \$738,000,000 for the corresponding periods of 1940 and 1939, respectively.

Table 25.—Exports of United States Merchandise—War-Related and Other Commodities

(Value in millions of dollars)

Period	Principal war-related products ¹	Other non-agricultural commodities	Foodstuffs, agricultural	Other agricultural commodities	Total exports of United States merchandise
Year:					
1938					
Value.....	584.6	1,081.1	415.0	411.0	2,091.7
Percent.....	17.9	56.0	20.0	16.1	100.0
1939					
Value.....	724.2	1,744.1	286.0	350.1	2,104.4
Percent.....	25.2	55.8	13.6	11.4	100.0
1940					
Value.....	1,501.5	1,315.1	220.0	295.7	3,332.3
Percent.....	36.2	48.7	6.6	8.5	100.0
January-September					
1939					
Value.....	440.8	1,297.6	210.6	201.4	2,150.4
Percent.....	20.4	60.2	10.0	9.4	100.0
1940					
Value.....	1,069.2	1,481.9	176.1	285.4	2,912.6
Percent.....	37.1	51.3	6.0	9.6	100.0
1941					
Value.....	1,331.7	1,532.5	261.7	320.8	3,446.7
Percent.....	41.1	47.8	7.8	9.3	100.0

¹ Includes heavy iron and steel, nonferrous metals, metalworking machinery, aircraft and parts, tanks, firearms and ammunition, and chemicals (coal tar, medicinal, industrial and explosives).

Source: U. S. Department of Commerce.

In view of the rise in world prices, the increase in the physical volume of trade in 1941 was less than that in dollar values, but comparisons on a quantity basis are rendered difficult by the changing composition of exports and imports. Strategic materials made up a larger share of imports in 1941, while military supplies and other war-related items assumed increased importance among exports. There was also a rise in the export of agricultural foodstuffs, particularly in concentrated forms possessing high nutritional value and requiring less shipping space than other forms. These trends are shown by tables 25 and 26 which, as far as 1941 is concerned, cover only the first 9 months of the year. (All of the following trade analysis for 1941 is

also necessarily based on 9 months' figures, inasmuch as later data by countries and by commodities have not been released.)

Reflecting the spread of the war and the development of United States foreign policy, the geographic distribution of foreign trade in 1941 was characterized, on the one hand, by an intensification of exchanges with friendly and Allied nations and, on the other hand, by a further reduction and, ultimately, cessation in dealings with the Axis powers and areas under their domination.

Exports to continental Europe amounted to only \$117,500,000 during the first 9 months of 1941 against \$580,500,000 for the same period of 1940, while imports from that area similarly declined from \$193,700,000 to \$105,700,000. Most of the decrease in trade with this area, however, had already occurred in the second half of 1940 after the German victories in Western Europe. In this regard the restrictive effects of the British blockade were subsequently reinforced by the development of United States export control, which had as one of its principal objectives the prevention of shipments of essential materials to Axis countries, and by the freezing of foreign-owned dollar assets, a policy first applied to the occupied countries as they fell victim to Axis aggression but extended on June 14, 1941, to Germany and Italy themselves as well as to all the rest of continental Europe.

Trade with Japan had also begun to decline in the closing months of 1940, presumably reflecting the influence of American export control measures. This decline was sharply accelerated in 1941 and on July 26, following Japanese occupation of French Indo-China, trade was brought to a complete standstill by the Executive Order freezing Japan's dollar assets. On a 9-month basis, therefore, exports to Japan were valued at only \$58,000,000 and imports from Japan at \$75,800,000, compared with \$165,200,000 and \$104,300,000, respectively, in 1940.

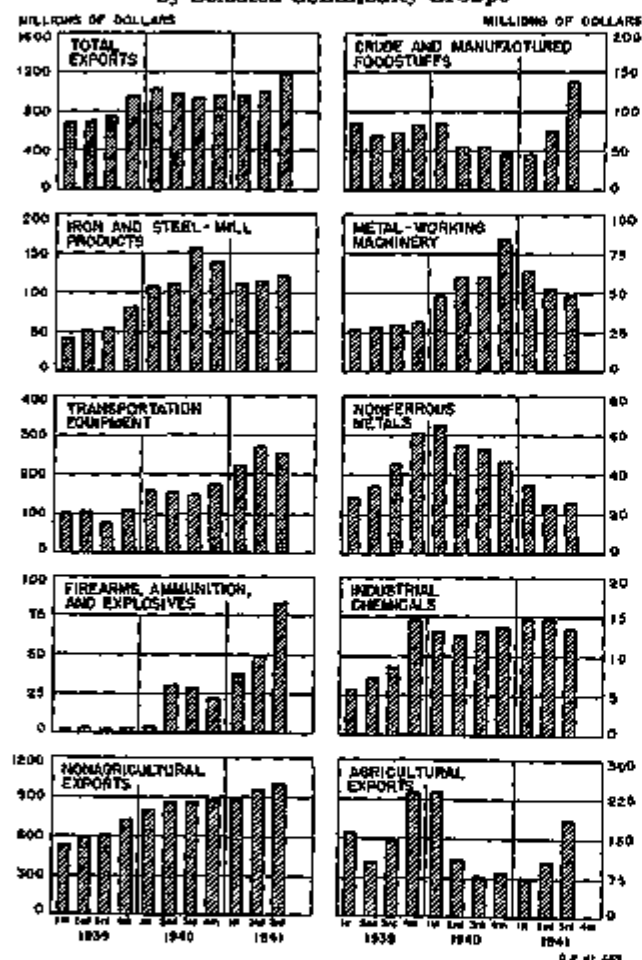
Rise in Shipments to British Countries.

By contrast, trade with virtually all major areas and countries other than continental Europe and Japan registered substantial increases in 1941. The most notable rise was in exports to the British Empire and Egypt which, for the first 9 months of the years in question, had already increased from \$919,500,000 in 1939 to \$1,436,900,000 in 1940 and rose further to \$2,227,600,000 in 1941. For the same 9-month periods, exports to the United Kingdom alone grew from \$370,500,000 in 1939 to \$698,200,000 in 1940 and to \$1,024,200,000 in 1941. Similarly, exports to Canada rose from \$335,300,000 in 1939 to \$511,000,000 in 1940 and to \$675,300,000 in 1941.

The larger shipments of military equipment and related supplies reflected in these increases also carried exports to Egypt from \$14,700,000 in the first three

quarters of 1940 to \$122,400,000 in the corresponding period of 1941, while shipments to South Africa rose from \$70,300,000 to \$124,600,000. Exports to Oceania, principally Australia and New Zealand, expanded only moderately from \$71,700,000 in 1940 to \$77,300,000 in 1941, on a 9-month basis in each case, but shipments to British areas in southern and southeastern Asia—including British India, Ceylon, Burma, Hong Kong,

Figure 29.—Value of Exports of United States Merchandise by Selected Commodity Groups



Note.—Data for fourth quarter of 1941 are not available for publication. The "Transportation Equipment" group includes automobiles, engines, and parts, aircraft, engines, and parts, merchant vessels, military tanks, railway cars, and other vehicles, parts and accessories.

Source: U. S. Department of Commerce.

and British Malaya—grew from \$79,500,000 to \$142,300,000. With respect to other countries in this area, exports to the Netherlands Indies and the Philippine Islands also increased substantially, but those to Thailand and French Indochina declined, particularly after the latter was occupied by the Japanese in July.

The increase in exports to the British Empire reflected chiefly deliveries on orders placed by the British out of their own dollar resources, derived largely from the sale of gold and investments in this country. The depletion of these resources, however, led to passage of the Lend-Lease Act on March 11, 1941,

under which there has been effected a growing volume of exports procured and paid for by the United States Government. Lend-lease shipments through November 1941 totaled \$595,000,000, of which the major portion was sent to the British Empire and Egypt, although shipments were also made to the other major fighting fronts or threatened areas. While lend-lease shipments were small by comparison with total exports to these areas and with lend-lease appropriations amounting to \$12,985,000,000,⁵ they have shown a marked growth from month to month and, as deliveries on old British orders are consummated and the necessary gap between appropriation and finished product under the lend-lease program is bridged, they may well be expected to constitute the major portion of the export trade in the near future.

Table 26.—Imports for Consumption, by Economic Classes

(Value in millions of dollars)

Period	Principal strategic materials ¹	Other crude materials and semi-manufactures	Foodstuffs	Finished manufactures	Total imports for consumption
Year					
1938					
Value	394.2	567.0	570.7	417.6	1,949.5
Percent	20.2	29.1	29.3	21.4	100.0
1939					
Value	568.6	605.7	604.2	440.3	2,218.8
Percent	25.6	27.3	27.2	19.9	100.0
1940					
Value	889.9	679.5	662.6	408.7	2,540.7
Percent	35.0	26.7	26.1	16.2	100.0
January-September					
1939					
Value	314.5	534.8	446.4	286.0	1,621.7
Percent	19.4	33.0	27.5	17.9	100.0
1940					
Value	639.9	604.2	428.4	300.7	1,973.2
Percent	32.4	30.6	21.7	15.3	100.0
1941					
Value	804.0	627.4	502.5	301.6	2,235.5
Percent	35.9	27.9	22.5	13.6	100.0

¹ Crude rubber, raw silk, nonferrous metals, including ores used in the manufacture of iron and steel, manufactured wool, and hides and skins.

Source: U. S. Department of Commerce.

Increase in Exports to Latin America Limited by Shortages.

While the value of exports to Latin America has grown substantially since the outbreak of war—rising, on a 9-month basis, from \$422,500,000 in 1939 to \$579,600,000 in 1940, and \$661,500,000 in 1941—part of the increase, particularly in recent months, has reflected a rise in price rather than in quantity. Moreover, the increase has served to replace only a part of the large volume of industrial and consumer goods previously furnished to Latin American countries by Europe. The virtually complete elimination of the latter as a source of supply—except for a reduced volume of shipments from the United Kingdom—would have resulted in a far greater increase in United States exports to its southern neighbors if this country's war production program had not levied such enormous demands on its plant capacity and material resources.

⁵ Including the initial lend-lease appropriation of \$7,000,000,000 on March 27, 1941, and the second lend-lease appropriation of \$5,985,000,000 on October 28, 1941. In addition, other appropriation measures passed during 1941 included funds totaling some \$4,000,000,000 which might be used for lend-lease purposes.

The constantly expanding scope of this program, however, has required an increasingly strict export control, the effects of which have necessarily been felt most keenly by those countries whose defense needs have appeared less immediate. An original list of commodities subject to export licensing requirements became effective July 5, 1940, and was steadily expanded thereafter. Following the Japanese attack on the United States in December 1941, the control was made applicable to the entire export trade. The restrictive effects of export control have been intensified, moreover, by the priorities granted defense production in the use of essential materials.

The threatened dislocation to the economic life of the other American republics resulting from the cutting off of European supplies has been of great concern to the United States, and special efforts have been made to meet their most essential needs. As the demands on our productive capacity multiplied, it became necessary to undertake broad surveys of total requirements—both domestic and foreign, military and civilian—of each commodity in short supply and to determine on this basis the amounts that could be allocated to meet the requirements of other countries.⁶

Trade with Latin America has also been strongly affected by the freezing of European assets, although in this case the effects relate not so much to the total volume of trade as to the conditions under which it is conducted. The freezing orders apply in principle to German, Italian, and other European nationals everywhere, including those in Latin America where they have long taken a leading part in commerce and industry. To combat the pro-Axis activities engaged in by many of these parties, the Government announced on July 17, 1941, a "Proclaimed List of Certain Blocked Nationals," consisting of some 1,800 firms or persons against whom the control measures were to be fully enforced. At the same time, in order that legitimate commerce might not suffer, the Treasury issued a general license authorizing payments for ordinary trade transactions with nationals of blocked countries whose names were not on the list.

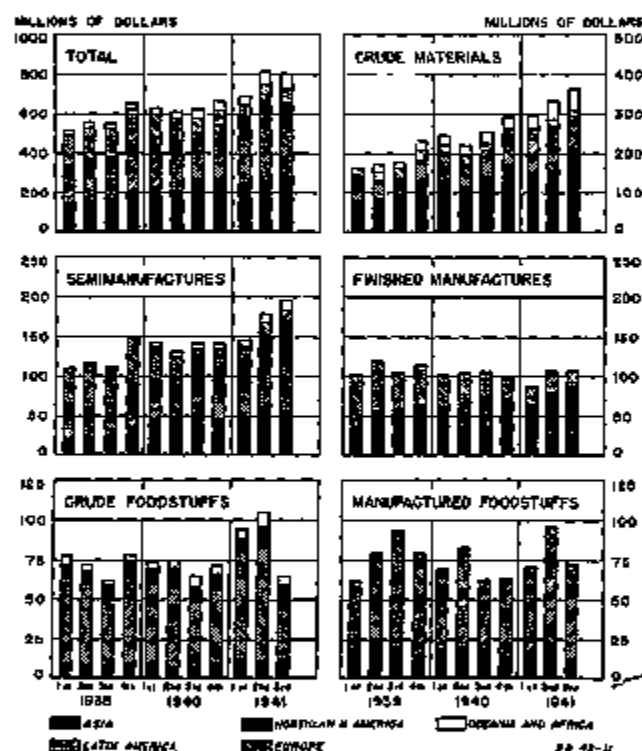
A number of supplements to the original Proclaimed List have since been issued which, while making some deletions, brought the total at the end of the year to approximately 3,961 names. Included in the total are some 720 Japanese firms and individuals, added after the Japanese attack on the United States. Prior to that time Japanese in Latin America had benefited by the general license mentioned above, despite the extension of the freezing orders to Japan on July 26.

⁶ The first allocation to the other American republics under this system was made on December 2, 1941, when it was announced that 218,000 metric tons of tin plate would be supplied to these countries during the 12 months starting December 10. On January 15, 1942, announcement was made of allocations of 20 additional commodities to be supplied to the other American republics during the first quarter of the current year.

Heavier Imports of Strategic Materials.

The increased industrial activity in the United States in combination with a program of stockpiling strategic materials, produced a marked expansion in imports during 1941. In general, those countries receiving a larger volume of shipments from the United States increased the amount of goods they sent here. The chief exception to this rule was the United Kingdom, from which imports declined from \$121,000,000 in the first three quarters of 1940 to \$101,200,000 in the same period of 1941. The latter total, however, was considerably higher than the corresponding figure for 1938 and only slightly less than that for 1939.

Figure 36.—Value of Imports Into the United States for Consumption, by Economic Classes and Continents



Note.—Data for fourth quarter of 1941 are not available for publication.
Source: U. S. Department of Commerce.

The most significant import advance during 1941 occurred in trade with raw-material producing countries. For the first 9 months of each year, imports from Latin America rose from \$489,500,000 in 1940 to \$767,800,000 in 1941, the balance of trade with that area thereby shifting to an excess of imports. The imports from southern and southeastern Asia in the first 9 months of 1941 were valued at \$640,000,000 compared with \$501,100,000 in the same period of 1940, and were more than double the corresponding figures for 1938 and 1939. This trade, consisting largely of rubber, tin, burlap, jute, and hemp, was seriously threatened by the spread of Japanese aggression in the South Pacific during the last few weeks of 1941.

Notable increases were also recorded in imports from Canada, which, on a 9-month basis, rose from \$301,000,000 in 1940 to \$391,300,000 in 1941. Similarly, imports from Oceania, principally from Australia, grew from \$22,100,000 to \$119,700,000 with wool accounting for most of the increase.

As in the case of exports, the Government has found it necessary to exercise an increasing degree of influence and control over the import trade as the war has progressed. The first step taken was the stockpile program, designed to increase imports and accumulate reserves of strategic and critical materials for which the United States is largely or wholly dependent on foreign sources of supply.

A very small beginning in building up stocks of essential materials had already been made under the Strategic Materials Act of June 1939, but it was not until a year later, following the collapse of France, that legislation was adopted authorizing the Reconstruction Finance Corporation to embark on a large-scale program. Through September 13, 1941, the R. F. C., acting through three subsidiaries established for the purpose, had entered into commitments totaling more than \$1,150,000,000 for foreign materials, including rubber, tin, aluminum, copper, tungsten, manganese ore, lead, chrome, antimony, zinc, cork, nitrate of soda, jute, wool, silk, and various other commodities. While actual deliveries of the various items were considerably less than the total amounts contracted for, receipts under the R. F. C. program, together with those by other Government agencies, have accounted for much of the rise in total imports. Virtually the entire import trade in strategic and critical commodities, moreover, now falls under Government control, either indirectly through contracts covering the principal sources of supply and priorities regulations in the use of the ma-

terials, or directly through orders restricting imports of specified items to Government agencies or firms acting on their orders. Rubber was the first commodity subjected to such direct control, effective June 23, 1941. Tin, silk, and hemp were similarly affected shortly thereafter, and on December 28 an additional list of 13 strategic materials was announced.

The task of moving the greatly increased volume of raw material imports has also made it necessary for the Government to assume control over ocean shipping in order to give preference to the most vital cargoes. While informal arrangements had already been in effect for some time previously, the Ship Warrants Act of July 14, 1941, gave the Maritime Commission authority to establish a formal control, implemented by the power to give precedence in the use of harbor facilities and other services to vessels and ship operators cooperating with the defense program in carrying the most urgently needed cargoes. This control may also be exercised with respect to export as well as import movements.

Gold and Capital Movements

For a number of years gold and capital movements have been increasingly determined by the existence or imminence of war and increasingly subject to the necessities of war finance. The dominance of these forces became stronger than ever in 1941, but the cumulative effects of war developments produced major changes in the trends which had hitherto prevailed. Most notable among these changes were the almost complete and to the transfer and sale of foreign gold reserves to the United States and the beginning of a substantial outflow of American capital abroad, thus reversing the heavy movement of previous years toward this country.

Gold imports prior to the outbreak of the war in

Table 27.—Exports (Including Resports) and General Imports, Showing Share of British Empire, Latin America, Continental Europe, and Other Areas

(Value in millions of dollars)

Period		British Empire and Egypt		Latin America ¹		Continental Europe ²		Other areas		Total value
		Value	Percent of total	Value	Percent of total	Value	Percent of total	Value	Percent of total	
EXPORTS, INCLUDING RESORTS										
Year										
1938		1,306.4	42.3	664.1	18.2	776.3	21.1	447.0	14.5	3,094.4
1939		1,283.2	40.7	633.2	19.0	773.7	24.3	478.0	15.0	3,177.2
1940		2,113.5	62.6	776.6	19.3	623.6	15.5	507.2	12.6	4,020.9
Jan-Sept										
1938		919.5	49.1	422.5	19.3	515.7	23.6	327.0	15.0	2,184.7
1939		1,488.9	48.1	570.6	19.1	690.5	19.2	389.4	12.6	3,139.4
1941		2,227.6	67.1	661.5	19.9	117.5	3.5	311.0	9.4	3,317.6
GENERAL IMPORTS										
Year										
1938		641.9	32.7	485.3	24.3	440.0	22.3	367.3	18.8	1,934.5
1939		838.3	36.7	586.0	25.7	403.5	19.0	468.7	20.3	2,338.5
1940		1,127.7	43.3	661.4	24.8	527.4	8.7	603.0	23.2	2,920.4
Jan-Sept										
1938		570.0	35.8	399.5	24.0	237.2	20.8	217.7	19.0	1,424.5
1939		830.2	49.8	499.5	28.2	162.7	10.0	426.6	22.1	1,919.0
1941		1,000.0	45.1	767.9	31.8	106.7	4.4	452.8	18.7	2,317.4

¹ Including the American Republics, the Canal Zone, and the European colonies in the Latin American area.

² Including U. S. E. in Asia, but excluding Turkey in Europe, Gibraltar, United Kingdom, Ireland, Iceland, Azores and Madeira Islands, and Malta, Goso, and Cyprus Islands.

Source: U. S. Department of Commerce.

Europe in September 1939 were utilized in part to offset the excess of merchandise exports from the United States but served in far greater measure as a medium for the transfer of capital, chiefly private funds, to this country.⁷ The movement became particularly heavy after the Czechoslovak crisis in 1938. During the ensuing 13 months up to the beginning of the war, net gold imports into the United States amounted to more than \$4,200,000,000, while the net inflow of capital as reported by banks and security dealers to the Treasury Department totaled more than \$1,800,000,000.

After the conflict in Europe started, the flow of gold to the United States continued in even heavier volume, net imports aggregating \$5,759,000,000 during the 16 months up to the end of 1940. This tremendous movement was largely occasioned by heavy transfers of government and central bank assets to the United States—mainly for purposes of war financing in the case of the United Kingdom and France, and for safekeeping in the case of other European countries. Particularly in the early months of the war, however, a substantial portion—possibly the major part—of the gold flow represented the continued flight of private capital. The net capital inflow during the first 16 months of the war, including both official and private funds, amounted to about \$800,000,000, according to the above-mentioned reports to the Treasury. In addition, capital assistance and advance payments on war orders by the United Kingdom to American firms—which may be regarded as a special type of capital transaction—were outstanding in the amount of \$720,000,000 at the end of 1940.⁸

As the war progressed, however, the conditions under which gold and capital had been transferred in such vast amounts underwent fundamental changes. Net gold imports into this country in 1941 fell to \$982,000,000, dropping below the level of current world production for the first time since 1934, while the inflow of capital which had been so largely responsible for the gold shipments gave way to a substantial outward movement.

The reversal in the capital movement in 1941 is partly indicated by the Treasury figures for the period January 1 to October 1, which indicate a net outflow of \$217,300,000. The size of the movement is not fully measured by these banking and security transactions data, however, since they do not reflect the large volume of financial assistance extended by the United States Government to foreign countries during the year. On the other hand, part of the outflow shown by the bank-

ing data is more apparent than real, inasmuch as during this period several foreign countries converted part of their dollar balances into gold earmarked for their account in the United States.⁹

The spread of German conquest over the greater part of Western Europe in 1940 cut off some of the major sources from which gold and capital movements to the United States had hitherto originated. The opportunity and incentive for such transfers were further reduced by the action of the United States Government in blocking the dollar assets of the occupied countries and, ultimately, of all the rest of Continental Europe. As a result of these developments, gold and capital movements on Continental European account have been relatively small since the middle of 1940. During 1941, from January 1 to October 1, the recorded data show a net capital outflow of \$85,600,000, resulting mainly from a decline in Swiss balances, while gold imports from Continental Europe (excluding Russia) dropped to negligible proportions.

Drain on British Gold and Dollar Resources.

The United Kingdom's gold stocks—another major source of earlier gold shipments to the United States—had already been heavily reduced by the flight of capital before the outbreak of the war and thereafter were further drawn upon to cover war orders in this country and other dollar requirements. By the end of 1940 British gold reserves stood at only \$292,000,000 against \$2,038,000,000 16 months earlier. These reserves were further reduced to \$151,000,000 by September 1, 1941. The main source of gold shipments to the United States during the year, however, was new gold production in the British Empire, although lesser amounts also came from Latin America and Russia.

In addition to the virtually complete liquidation of its gold reserves, the United Kingdom has also drawn heavily upon its investments in the United States for purposes of war financing. During 1940 this withdrawal was offset by the heavy capital inflow from other countries as well as by the temporary accumulation of British assets in the form of advance payments to American manufacturers on war orders, as referred to above. During 1941, however, the decline in the outstanding amount of such advance payments, as deliveries on orders were consummated, together with the continued liquidation of British investments, added to the outflow of capital on other accounts.

The volume of British-owned dollar securities disposed of in this market in 1941 is partly indicated by the security transactions data reported to the Treasury, which show net sales of \$222,000,000 for the account of the United Kingdom during the first 9 months of the year. According to the same source, the volume

⁷ A large part of the gold inflow in recent years, however, has gone into—or been offset by—earmarked gold held in this country for foreign account. The amount of gold under earmark on various selected dates was as follows: December 31, 1934, \$9,617,000; July 31, 1935, \$400,000,000; August 31, 1939, \$1,135,413,000; December 31, 1939, \$1,103,004,000; December 31, 1940, \$1,807,673,000; December 31, 1941, \$2,318,331,000.

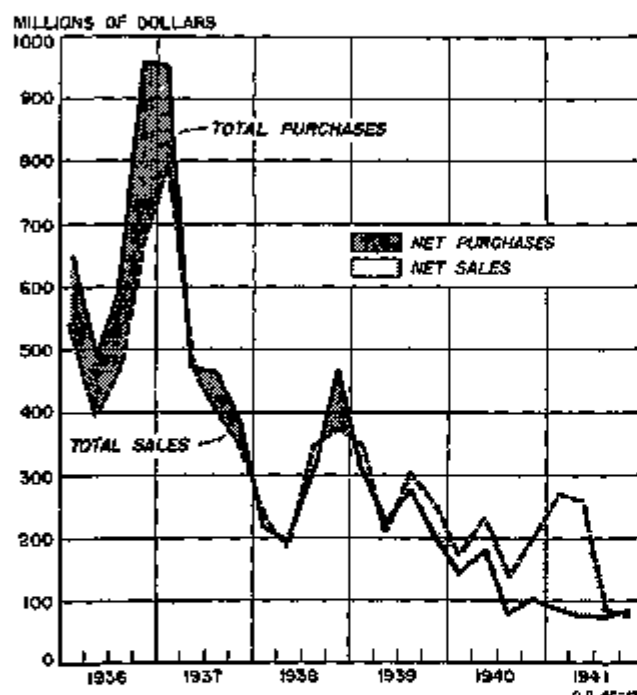
⁸ These figures are believed to have been greatly exceeded, however, by unreported capital transfers of which there is no direct statistical measure. See discussion on pp. 45 and 46 of the Balance of International Payments of the United States in 1940, U. S. Department of Commerce, 1941.

⁹ Such earmarking operations in conjunction with the reduced rate of gold imports and other factors actually produced a slight decline in the monetary gold stock of the United States in the last 2 months of the year for the first time since January 1938.

of net sales of such securities during the first 16 months of the war up to the end of 1940 had amounted to \$276,000,000.¹⁸

While gold reserves and security holdings were the first to be mobilized for meeting its dollar exchange requirements, the United Kingdom has also found it necessary to realize on its direct investments in the United States. Early in 1941 the American subsidiary of a large British company was sold outright to the public in this country, yielding a net return of some \$54,000,000. Later a new procedure was adopted under

Figure 31.—Foreign Purchases and Sales, and Net Purchases or Sales of United States Domestic Securities



NOTE.—Data include transactions executed in the United States for foreign account, executed abroad for domestic account, and transactions in joint foreign arbitrage accounts as reported by banks, brokers, and dealers in the United States. Quarterly data in this chart are totals of weekly transactions.

Source: U. S. Treasury Department.

which British investments, instead of being sold, were pledged as security for loans from the R. F. C. This method was employed on a large scale in July, when the R. F. C. announced a loan of \$425,000,000 backed by a large volume of British-owned dollar securities and direct investments.

In the meantime, the depletion of the United Kingdom's dollar availabilities, which threatened a drastic curtailment in the British war potential, led to the adoption of a more direct and extensive form of assistance by the United States Government—the lend-lease arrangement. The amount of such aid furnished to foreign countries between passage of the Act on March 11, 1941, and the end of November is valued at approxi-

mately \$1,200,000,000. This total includes not only actual exports, as previously discussed, and ship repairs and other services rendered, but also construction of plant facilities in the United States and goods in process of manufacture or awaiting shipment. In general, nevertheless, lend-lease aid may be regarded as a particular type of "capital outflow" additional to the reduction in British assets and other capital transfers. The special character of such "transactions" is emphasized, however, by the provisions of the Lend-Lease Act, which states that "the terms and conditions upon which any such foreign government receives any aid authorized * * * shall be those which the President deems satisfactory, and the benefit to the United States may be payment or repayment in kind or property, or any other direct or indirect benefit which the President deems satisfactory."

Economic and Financial Aid to Other Countries.

While the British were the principal beneficiaries of lend-lease aid in 1941, lend-lease equipment and services have also been supplied to various other countries. In all, some 32 countries outside the British Empire have been declared eligible for lend-lease assistance, although some of them had not actually begun to receive such aid by the end of the year.

China was among the first countries declared eligible for lend-lease aid, and has already received a substantial volume of material and technical assistance, including the improvement of transport facilities over the Burma Road. In addition, the United States Stabilization Fund announced on April 25, 1941, a \$50,000,000 credit to be used, along with certain British and Chinese resources, in supporting the yuan. China also continued to benefit in 1941 from credits totaling \$95,000,000 opened by the Export-Import Bank in the previous year.

The so-called Hyde Park agreement of April 20, 1941, between the United States and Canada, which laid down a program for mobilizing the resources and coordinating the production programs of the two countries, provided among other things that Canada's purchases in the United States of materials and goods to be used in equipment which Canada is producing for the United Kingdom would be supplied under lend-lease. As one development of this program, the Metals Reserve Company, one of the R. F. C. subsidiaries, under the stockpile program, announced on July 2, 1941, an agreement to advance \$50,000,000 for power and plant expansion in Canada in connection with the purchase of 340,000 tons of aluminum.

A lend-lease agreement with Russia providing for \$1,000,000,000 of aid by June 1942 was announced on November 6, and deliveries were started shortly thereafter. Prior to this agreement the Defense Supplies Corporation, another R. F. C. subsidiary, had contracted with Amtorg Trading Corporation for the

¹⁸ For a more detailed discussion of the mobilization of British dollar assets see pp. 46-51 of the *Bulletin of International Payments of the United States in 1940*, U. S. Department of Commerce, 1941, and the article on "Gold and Dollar Resources of the United Kingdom" in the *Federal Reserve Bulletin* for December 1941.

purchase of \$100,000,000 of materials from Russia and had agreed to pay half of this amount in advance to provide the Soviet Government with funds for the purchase of war supplies in the United States. The United States Treasury had also made two advances of \$10,000,000 and \$30,000,000, respectively, against gold to be delivered by Russia to the United States.¹¹

Lend-lease aid to the Netherlands, including the Netherlands Indies, has not entailed any financial aid or "capital outflow" from the United States. Under an agreement made early in August, the Netherlands Government has undertaken to make advance payment on the so-called "cash reimbursement" basis for all lend-lease articles. The Netherlands foreign exchange position had been well maintained by the heavy volume of United States imports from the Netherlands Indies, as evidenced in part by an increase from \$88,000,000 on August 31, 1939, to \$201,000,000 on September 30, 1941, in the gold reserves reported by the Bank of Java.

The lend-lease agreement with Iceland, announced November 21, 1941, also provides for payments on a cash reimbursement basis, but supplementary arrangements were made whereby the United States supplies Iceland with the necessary dollar exchange. Under these arrangements the United States undertakes to purchase Iceland's fish and fish oil for dollars. The dollars are to be used by Iceland to pay for its vital requirements here, while the fish and fish oil are transferred by the United States to the United Kingdom as defense aid.

All of the other American republics have been declared eligible for lend-lease assistance, and lend-lease agreements have been concluded or are in process of negotiation with a number of them. The agreements made thus far provide that some part of the cost of the defense articles transferred shall be borne by the country receiving aid, the proportion varying according to the economic position of the country concerned.

Various other agreements and arrangements providing for economic and financial collaboration with the other American republics were made in 1941. New loan authorizations during the year by the Export-Import Bank, totaling \$182,900,000, were largely for the Latin American area.

Included in the Export-Import Bank's loans was one of \$30,000,000 for Mexico, granted as part of a broad series of agreements, announced November 19, 1941, covering trade and financial relations with that country. These agreements also provided for the extension of a \$40,000,000 credit by the United States Stabilization Fund, to be used in stabilizing the exchange value of the peso, and for the continued purchase of newly

mined silver from the Mexican Government by the United States Treasury.

The financial assistance extended by the United States Government, in conjunction with the great increase in United States purchases of raw materials and other factors, has greatly alleviated the dollar exchange position of the other American countries, which had been subjected to considerable strain in the early months of the war. This improvement is reflected in the appreciation of some of the Latin American currencies in terms of the United States dollar. It may also account for the decline in gold shipments from the other American republics to the United States, which amounted to only 55,000,000 in the first 9 months of 1941 as compared with 108,000,000 in the same period of 1940. On the one hand, Argentina, having rectified its trade position with the United States by a sharp reduction in imports and an even sharper increase in exports, has not continued shipments out of its gold reserves since the end of 1940. On the other hand, at least two of the principal gold-producing countries—Mexico and Brazil—appear to be retaining part of their new production at home and adding it to their reserves.

Finance

Federal Finance

Growing expenditure for armaments dominated financial developments throughout the whole of 1941. Within the year the Federal financial statements came to reflect a substantial share of the Nation's economic activity, with expenditures of all sorts advancing by December to an annual rate of more than 30 billion dollars. For the year, aggregate budget outlays rose to 19 billion dollars, nearly double the 1940 volume and topping the previous peak of 18.5 billion in fiscal year 1919. Moreover, at the outset of the new year, the President announced the Nation's armaments goal: an outlay on war material in the second half of fiscal year 1942 of 17 billions, followed by an expenditure of 56 billions in fiscal year 1943. Thus, it became apparent that public spending would absorb all financial resources that could be made available.

In a small measure, the arms program helped finance itself, for tax yields were up sharply, a result in part of the higher national income produced directly and indirectly under stimulus from the arms expenditure. Of more importance in elevating tax yields, however, were the higher rates established under the two revenue acts of 1940. Of course, the Revenue Act of 1941 advanced tax rates considerably further. However, the increased tax liabilities incurred thereby are payable for the most part only in 1942; consequently, they were responsible for only a very small amount of the peak 8.8-billion-dollar net tax and miscellaneous revenue received by the Federal Government in 1941.

¹¹ On January 5, 1942, the Treasury announced the purchase of an additional \$20,000,000 of gold from the Soviet Union. At the same time it was stated that all of the gold against the \$10,000,000 advance and two thirds of the gold against the \$30,000,000 advance had been delivered.

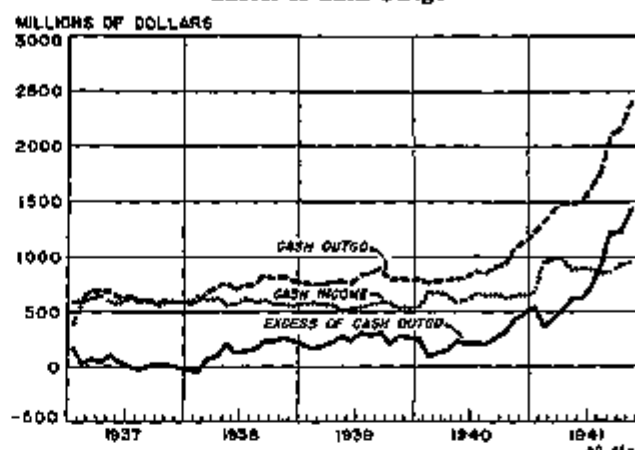
Despite the advance in tax receipts, the record expenditures necessitated a 13-billion-dollar increase in the public debt. In the main, this was financed through heavier investment on the part of private individuals, corporations, and Government trust accounts, but the banking system was again called upon to absorb a good share (one-fourth) of the increase.

Treasury Expenditures

That 1941 was a year of transition between the comparatively modest defense effort of 1940 and the all-out war production of 1942 is evident from the figures relating to Government expenditures. Expenditures of direct national-defense agencies advanced about 9.8 billion dollars, one-half billion more than the increase in total Treasury outlays. This difference was the result of reduced outlay for the agricultural, unemployment relief, and public-works programs, offset partially by higher interest payments and by larger transfers of funds to special trust accounts. As is explained in the introductory section of this review, war expenditures were accelerated throughout the year. In the final quarter such outlays had risen to 4.8 billions, or 74 percent of all Treasury expenditures, as compared with first-quarter defense spending of 1.9 billion, equivalent to 53 percent of the total. In December alone expenditures of agencies concerned with the military program (other than the Reconstruction Finance Corporation) amounted to 1.8 billion, less than a third under the total of such expenditures in 1940.

In 1941 the Treasury classified as defense expenditures only those arising from appropriations made directly for military purposes. Army, Navy, Maritime Commission, Lend-Lease, and the various directive agencies. To complete the picture of arms activity, it is necessary to take account not only of the activities of government corporations (discussed below), but also of the fact that during the year many of the functions of regular government agencies were reoriented to have

Figure 32.—Cash Income and Outgo of the Treasury, and Excess of Cash Outgo



NOTE.—Data are plotted on a 3 month moving average, centered at the second month. Basic figures for January 1942 were not available in time to compute the moving average figure for December 1941.

Source: U. S. Treasury Department.

a direct bearing on the war effort. For example, while Works Projects Administration expenditures were cut from 1.4 billion in 1940 to about one billion in 1941, the reduction in "nondefense spending" was much larger, for nearly 40 percent of the project cost chargeable to W. P. A. appropriations represented work which was mainly military in character. Similarly, the agricultural program was changed to encourage the production of agricultural products essential to the prosecution of the war, and the character of National Youth Administration and Civilian Conservation Corps programs was altered to emphasize defense training and defense projects.

However, it is significant that the only Treasury categories of expenditures higher in 1941 than in 1940 were—aside from direct armament outlays—interest payments and transfers to trust accounts. Notwithstanding a change in the composition of the public debt which effected a decrease in the computed interest rate, the substantially higher gross debt necessitated interest payments 70 million dollars greater than payments in 1940.

Table 28.—Budget Expenditures by Major Types, Calendar Years¹

(Millions of dollars)

Major type	1938, total	1939, total	1940					1941				
			First quarter	Second quarter	Third quarter	Fourth quarter	Total	First quarter	Second quarter	Third quarter	Fourth quarter	Total
National defense	1,117	1,868	425	491	621	1,140	2,683	1,901	2,412	3,406	4,810	12,527
Agricultural adjustment program	588	907	347	473	182	303	1,014	272	110	103	243	728
Unemployment relief	2,388	2,141	479	493	432	489	1,893	442	438	346	440	1,666
Transfers to trust accounts	217	302	10	33	101	39	243	77	40	189	61	370
Interest on the public debt	910	971	202	384	188	393	1,070	190	434	303	323	1,250
Debt retirements	33	53	31	50	10	17	144	11	20	45	26	106
All other	2,874	3,210	744	743	689	630	2,805	997	581	736	723	2,737
Total	8,149	8,041	2,258	2,375	2,309	2,575	9,537	3,509	4,004	4,046	6,307	19,166
Total, excluding debt retirement	8,097	8,056	2,202	2,310	2,283	2,558	9,400	3,498	3,984	4,001	6,281	18,960

¹ General and special accounts, basis of the Daily Treasury Statement. Classifications are those currently published in the Survey of Current Business. For detailed notes, see page 24 of the November 1941 issue.

Source: Daily Statement and Bulletin of the Treasury Department.

Transfers to trust accounts were 379 million as compared with 243 million in 1940, largely because of funds provided for the Surplus Marketing Administration, whose operations recently were put on a trust account basis by the Treasury.¹²

Treasury Receipts

As a result of the combined effects of a higher national income and the higher tax rates established under the revenue acts of 1940 and 1941, total Treasury receipts (including about 800 million dollars directly transferred to the old-age and survivors insurance trust fund) increased nearly 50 percent over the corresponding 1940 figure to a record level of 9.6 billion dollars.

It must be remembered that income and excess profits tax collections, since such taxes are payable in the current year on income received in the previous year, reflected neither the 1941 level of activity nor the higher rates established under the Revenue Act of 1941. Hence the substantial advance in income tax receipts was due mainly to the rates provided by the 1940 revenue acts, although the income gain achieved in 1940 was also a relevant factor. Legislation in 1940 relating to personal income taxes had reduced exemptions 20 percent and increased effective surtax rates in certain brackets; the corporation income tax structure also had been modified both by an increase in tax rates and by the imposition of an excess profits tax. In addition, provision had been made for a special defense tax equal to 10 percent of the regular computed income tax.

Largely as a result of this legislation individual income tax collections increased to 1.6 billion dollars, as compared with the 1940 level of slightly more than one billion. An even larger advance was reported for

corporate income and other profits taxes, including 327 million dollars of excess profits taxes, for which there were no comparable 1940 collections. These receipts were doubled to a total of 2.6 billion dollars.

Miscellaneous internal revenue—mostly excise taxes—continued to be the largest single revenue category as receipts expanded to 3.4 billion from 2.6 billion in 1940. Part of this increase again was produced by higher tax rates. The expansion shown in table 29 for the final quarter, however, was the joint result of the new rates introduced by the Revenue Act of 1941 and the payment at that time of the bulk of the capital stock tax (256 million dollars out of a total of 279 million). Also included as part of miscellaneous revenue were the estate and gift taxes. These yielded 400 million in 1941.

Customs receipts likewise experienced a marked increase in keeping with the expansion of imports. Import of high-duty goods was particularly heavy (the metals and wool are outstanding illustrations); so total receipts advanced to 438 million dollars, about a third higher than the previous year. Part of this increase was illusory, however, for a substantial share of the revenue was received from imports of strategic and other materials made by the Government itself through such agencies as the Metals Reserve, Rubber Reserve, and Defense Supplies Corporations.

A final category of tax receipts includes those produced by the social-security and railroad-employment taxes. The expansion of business activity in 1941 elevated the aggregate of this revenue to 1,036 million dollars (the 1940 total was 873 million). Excluded from the Treasury's "net" receipts, but included in the above figures, is an amount equal to the collection of social security employment taxes (i. e., excluding the Federal share of unemployment insurance taxes) less reimbursements to the general fund for administrative expenses. These funds are automatically appropriated to the Federal old-age and survivors insurance trust fund, and hence are not available for financing regular government functions except insofar as the trust fund provides an internal market for public-debt issues.

Table 29.—Budget Receipts by Major Types, Calendar Years
(Millions of dollars)

Major type	1938 total	1939 total	1940					1941				
			First quarter	Second quarter	Third quarter	Fourth quarter	Total	First quarter	Second quarter	Third quarter	Fourth quarter	Total
Corporation income and excess profits taxes ¹ . . .	1,376	977	154	325	317	336	1,330	696	706	602	630	2,634
Individual income taxes	1,344	878	420	230	188	168	1,006	670	331	314	277	1,592
Employment taxes	602	783	212	200	206	206	824	223	230	255	209	918
Miscellaneous internal revenue	2,308	2,306	623	570	786	717	2,696	678	785	812	1,122	3,395
Customs	309	333	90	81	71	87	329	103	128	107	97	436
Other receipts	180	210	63	94	52	64	273	173	256	61	63	553
Adjustment ²	14	3	-8	-17	3	1	-21	10	-6	-6	-26	-27
Total receipts	6,983	5,485	1,603	1,488	1,641	1,591	6,316	2,612	2,421	2,142	2,439	9,612
Less: Net appropriation to Federal old age and survivors insurance trust fund	343	566	135	135	156	160	587	161	135	201	212	709
Net receipts	6,640	4,919	1,468	1,353	1,485	1,431	5,729	2,451	2,285	1,941	2,227	8,903

¹ Includes miscellaneous profits taxes, unjust enrichment tax, declared value excess profits tax, and the limited provisions of the Warrent Act.

² Internal revenue data represent collections, whereas other data (including totals) represent Treasury receipts. Due to slight time and coverage differences, there is a discrepancy between reported collections and reported receipts equal to the undistributable adjustment shown here.

Source: Daily Statement and Bulletin of the Treasury Department.

Nontax receipts, heavily influenced by the return of certain funds by government corporations, increased from 263 million in 1940 to 533 million in 1941.

The Revenue Act of 1941 and the 1943 Budget.

A financial development of considerable importance to which some reference already has been made was the passage of the Revenue Act of 1941. Originally this was designed to expand Federal tax receipts to two-thirds of the total anticipated expenditures. To this end, a combination of new taxes and upward rate revisions was installed to yield (at the income level expected to prevail in 1942) between 3.5 and 4 billion dollars in Treasury receipts. However, though the original estimates of yields are likely to be surpassed, the tremendous increase in war needs is more than doubling the volume of expenditure the Nation is preparing to undertake.

Under such circumstances further tax revisions are required, and the President requested, in his budget message at the outset of 1942, legislation to assure the addition of 7 billion dollars to tax receipts for fiscal year 1943. This would raise total receipts to approximately 23.5 billion in the fiscal year 1943. An additional request was made for 2 billion in pay-roll taxes, to be diverted directly into the social security trust fund. Even so, however, fulfillment of the expenditure goal would leave tax receipts at considerably less than half of the total government outlay.

Some idea of the evolution in the various sources of government funds may be gathered from figure 33, which presents actual total budget expenditures and net budget receipts by major types for the past 4 years, as well as estimates contained in the current budget for the fiscal years 1942 and 1943.

Table 30.—Estimated Change in Yields of Various Taxes Under Revenue Act of 1941¹
(Millions of dollars)

Item	Amount
Corporation income taxes	
Normal tax	-403.3
Surplus	783.1
Excess profits tax	1,112.3
Total corporation income taxes	1,952.1
Individual income taxes	1,144.6
Total income taxes	2,526.7
Miscellaneous internal revenue	
Capital stock tax	22.2
Excise tax	141.6
Gift tax	16.0
Manufacturers and retailers excise taxes ²	420.1
Miscellaneous taxes	347.7
Total miscellaneous internal revenue ²	1,026.7
Grand total ²	3,553.4

¹ Compiled by the U. S. Treasury Department, Division of Research and Statistics. All estimates show full year effects. Estimates for corporation and individual income taxes are based on levels of income estimated for calendar year 1941; all other estimates are based on income levels estimated for fiscal year 1942.

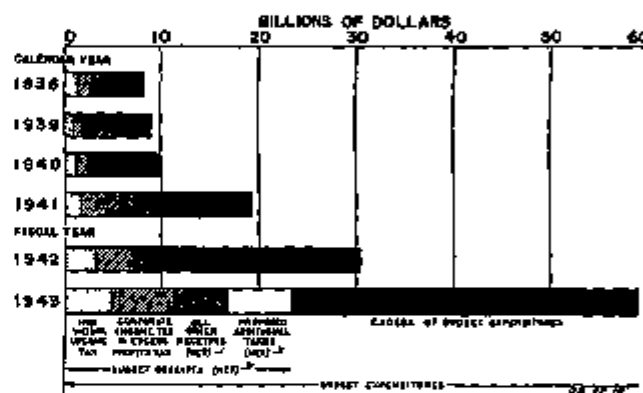
² Excluding 47.5 million dollars nonrecurrent 800 stock taxes.

New tax legislation will undoubtedly modify the Federal tax structure in many important aspects. In this regard the President requested in his 1942 budget

message a continuance of the trend towards more progressive taxation. However, also to be considered were the anti-inflationary aspects of the tax system, these to supplement, but not supplant, revenue and equity considerations.

The Revenue Act of 1941 had followed progressive lines. In general, income taxes, both corporate and personal, had been sharply advanced, and heavy excise duties had been placed on a large number of commodities, particularly consumer durables. Besides lowering personal income exemptions (thus increasing the number of taxpayers), tax rates were raised relatively for the low and middle income groups, with surtaxes being increased and extended all along the line. Rates of the excess profits tax were also advanced, though changes were not marked. The

Figure 33.—Budget Receipts and Expenditures of the Federal Government



¹ Excludes employment taxes transferred directly to the old age and survivors insurance (trust) fund.

Source: Data through 1941, U. S. Treasury Department, data for 1942 and 1943 from "The Budget of the United States Government," 1943.

net effect of these alterations on the revenue expected to be received in fiscal year 1942 is shown in table 30.¹²

The Rising Public Debt

The tremendous growth of arms expenditures made necessary a near-record addition to the public debt. By the end of the year, the debt outstanding had reached 58 billion dollars, an increase of nearly 13 billion. The regular budget deficit of about 10.2 billion was augmented by 1.1 billion in excess of expenditures in trust, checking, and miscellaneous accounts, and by an increase in the general fund balance of 1.6 billion. Table 31 shows a reconciliation of the budget deficit to the increase in the public debt for 1941, and estimated figures for the fiscal years 1942 and 1943 as given in the 1943 budget.

In addition, the volume of outstanding obligations guaranteed by the United States (exclusive of those owned by the Treasury) increased by 410 million. In October the financing of government corporations was

¹² For more detailed discussion of the Revenue Act of 1941, see Survey of Current Business, October 1941, pp. 4-6.

integrated with general Federal financing. Whereas in the past the various corporations floated their obligations on the open market, the new procedure calls for Treasury purchase of all such new issues and refunding of matured issues with Treasury obligations. The effect of this will be to increase the proportion of the total public debt which is in the form of direct Federal obligations and to decrease correspondingly outstanding guaranteed issues. Only one such transaction occurred during the past year; on November 1, Treasury notes in the amount of 503 million were exchanged for an equivalent amount of maturing notes of the Reconstruction Finance Corporation and the Commodity Credit Corporation. The 1943 budget shows that purchases and refundings of securities of government corporations will amount to 3 billion in fiscal 1942 and 4.4 billion in fiscal 1943.

Table 31.—Factors of Increase in the Public Debt, Calendar Year 1941, Fiscal Years 1942 and 1943

Item	Calendar year 1941	Fiscal year	
		1942	1943
Budget expenditures, excluding debt retirement..	18,050	20,576	23,828
Net receipts.....	8,848	11,044	23,487
Excess of budget expenditures	10,203	18,532	35,441
Trust accounts, etc., excess of expenditures..	1,078	2,027	4,353
Increase in general fund balance.....	1,030	—8	13
Increase in the public debt.....	12,913	21,551	39,807
Public debt, beginning of year.....	45,025	66,601	70,612
Public debt, end of year.....	57,938	70,612	110,421

¹ Reflects effects of financing government corporations through the Treasury Department.

Source: Daily Statement of the U. S. Treasury and 1943 Budget.

The increase in the public debt was of necessity largely financed by publicly offered securities. While the net investment of trust fund accounts—principally the two social security accounts—amounted to 1,612 million as compared with 1,138 million in the previous year, there still remained 11.4 billion to be raised from nongovernmental sources. Financing was facilitated somewhat by the issuance of a new series of tax anticipation notes, sales of which returned 2,471 million. These notes were first offered August 1, and by the end of that month sales had amounted to more than one billion dollars.

On May 1, the sale of United States savings bonds was discontinued, and in their place 3 series of defense bonds were offered. In addition to Series E, which is in effect a continuation of the old savings bonds, an offering was made of 2 entirely new series designed primarily for large investors. Net sales of these bonds, plus net sales of savings bonds prior to May 1, amounted to 2,945 million.

Subscriptions to special issues, tax anticipation notes, and savings bonds thus accounted for over 7 billion, or more than half the increase in outstanding debt. Bond and note sales through regular financial and banking channels accounted for the remainder. The increase

in publicly-held bonds other than savings bonds was 5,454 million. Special national defense notes—first issued in December 1940 and notable for their low interest rate ($\frac{3}{8}$ percent) in spite of the fact that the interest income is fully taxable—increased by 635 million.

Table 32.—Composition of the Public Debt as of December 31, 1940 and 1941
(Millions of dollars)

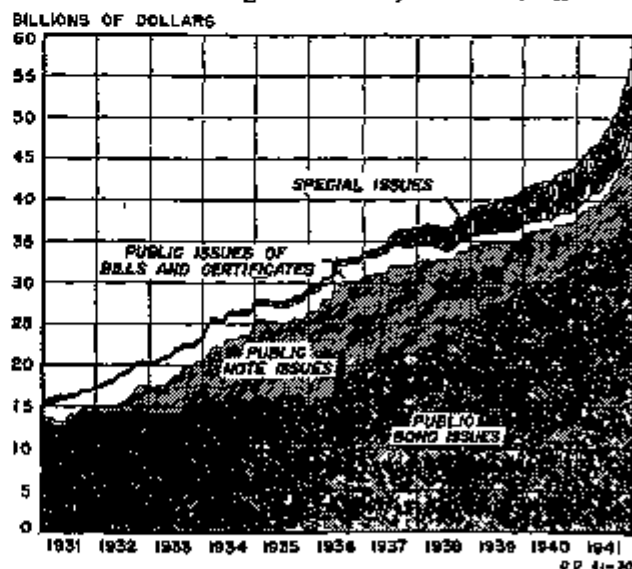
Item	Dec 31, 1940	Dec 31, 1941	Increase
Public issues			
Bonds			
United States savings bonds ¹	3,196	6,140	2,945
All other bonds.....	28,406	33,960	5,554
Notes			
Regular series.....	5,047	4,881	—166
National defense series.....	631	1,108	477
Tax notes.....	—	2,471	2,471
Bills			
Special issues.....	1,310	2,002	692
Noninterest-bearing debt.....	5,370	6,961	1,591
Total public debt.....	45,025	57,938	12,913

¹ Including series E, F, and G defense bonds after May 1, 1941.

Source: U. S. Treasury Department.

In addition there were 6 major bond issues which resulted in Treasury acquisition of 4.2 billion in new cash and in refunding of maturing bonds and notes amounting to 2.5 billion, with net retirement of regular Treasury notes amounting to 816 million. Toward

Figure 34.—Composition of United States Government Interest-Bearing Public Debt, End of Month



Source: U. S. Treasury Department.

the end of the year, weekly offerings of Treasury bills were made in excess of weekly maturities. Most of the 700-million-dollar increase in outstanding bills occurred after October 15.

Decline in Interest Rates.

The Government had little difficulty in satisfying its financial requirements in spite of the fact that its demands on the money market were the heaviest since

the World War. As a matter of fact, the yield on long-term Treasury bonds fell to a record low in November (see figure 38), with the 2½ percent 1967-72 bonds which had been issued in October being quoted at 103½ at the month's end. The market broke slightly immediately following our entrance into the war, however, and these bonds, as well as the 2-percent medium-term bonds issued during December, closed the year near par.

Financing was complicated somewhat by the Public Debt Act of 1941 which requires that interest on all Treasury obligations issued after March 1, 1941, be fully taxable. This provision necessitated a higher coupon with respect to new bond and note issues, and resulted in lower bids for bills. The discount rate on new Treasury bills issued after March 1 was about 0.1 percent, whereas bills had been sold in the recent past on a no-yield basis. By the end of the year, however, a substantial reduction in excess reserves at New York City combined with a continued pressure of demand for short-term funds had so tightened the market that discount rates on Treasury bills rose to approximately 0.3 percent.

With all issues except savings bonds being floated during the year at rates below the previous computed interest rate and with refunding operations resulting in the substitution of 2 and 2½ percent bonds for maturing issues bearing coupons of 3½ and 3¾ percent, the computed interest rate declined from 2.566 percent to 2.409 percent.

Government Corporations and Credit Agencies

A good share of the Federal Government's financed activity is carried on by Government corporations and credit agencies, only a part of whose financial transactions are reflected in the regular budget. Although their operations during 1941 were overshadowed by the unprecedented volume of regular budgeted spending, these agencies played an important role in economic developments during the year. This is particularly true of the so-called national-defense corporations, which, as subsidiaries of Reconstruction Finance Corporation, have the primary function of sponsoring essential projects which are not suited to private financing because of the risk involved or because of their necessary integration with the over-all defense program.

As of September 13, the latest date for which publishable figures are available, defense commitments by these corporations and by the Reconstruction Finance Corporation itself had been made involving 3,915 million dollars as follows:

	Millions of dollars
Rubber Reserve Corporation.....	210
Metals Reserve Corporation.....	970
Defense Supplies Corporation.....	207
Defense Plant Corporation.....	2,042
Defense Homes Corporation.....	12
Reconstruction Finance Defense Loans.....	474

The first 3 corporations are engaged primarily in importing strategic and critical materials. The Defense Plant Corporation, on the other hand, finances domestic industrial facilities upon the recommendation of defense agencies and leases them to private operators. While title is retained by the corporation, provision is often made for purchase at the end of the emergency at the option of the lessee. The Defense Homes Corporation finances residential construction in congested defense areas, while Reconstruction Finance Corporation defense loans are made on both short- and long-term bases to supplement private financing of business organizations engaged in national defense work.

Table 33 presents some salient balance sheet statistics for all Government corporations and credit agencies as of December 31, 1941. Excluding inter-agency transactions, total assets of these agencies increased by 2,160 million over a year earlier, while their liabilities, exclusive of obligations owned by other Government agencies and the Treasury, advanced by 239 million.

The greatest increases of assets were those of corporations and agencies directly concerned with the war program, and—in contrast to the normal situation—substantial holdings of tangibles were reported. Thus, assets of the 5 Reconstruction Finance Corporation subsidiaries listed above increased by 757 million as a result of their stockpiling and defense construction activities. Assets of the Maritime Commission, consisting for the greater part of ships building or contracted for, rose about 539 million, while expansion of power resources in the Tennessee Valley was largely responsible for an advance of 104 million in the property holdings of the Tennessee Valley Authority. Commodity Credit Corporation holdings of agricultural commodities, principally wheat, increased so greatly that a 47 million dollar decline in crop loans was more than offset, leaving a net increase in assets of 347 million.

On the other hand, with the exception of the Reconstruction Finance Corporation, lending agencies in general changed their asset position but little. In some instances—the Home Owners Loan Corporation, for example—holdings were actually curtailed.

Of the total increase in liabilities, only about 7 percent represented an increase in outstanding guaranteed obligations, the balance being accounted for mainly by reserve accounts or by liabilities on account of contractors' commitments for future performance. New fund requirements of the Commodity Credit Corporation and the Reconstruction Finance Corporation prior to October, required the issuance of new guaranteed obligations of about 1.2 billion. However, Home Owners Loan Corporation and United States Housing Authority issues amounting to 303 million were retired on maturity and other guaranteed obligations were replaced with Treasury notes in the amount of 503 million on November 1. Thus, there was a net increase

in outstanding debt guaranteed by the United States amounting to 411 million dollars, bringing the total of such debt to 6.4 billion.

Table 33.—Salient Balance Sheet Statistics, All Governmental Corporations and Credit Agencies, as of Dec. 31, 1940 and 1941

(Millions of dollars)			
Item	Dec 31, 1940	Dec 31, 1941	Net change
Assets			
Loans, cash, and investments.....	10,887	11,530	+642
Other assets.....	2,374	3,982	+1,608
Total assets.....	13,261	15,512	+2,250
Liabilities and reserves			
Obligations guaranteed by the United States....	5,948	6,389	+441
Other.....	3,229	4,167	+938
Total liabilities and reserves.....	9,177	10,556	+1,379
Proprietary interest			
Owned by the United States.....	2,559	4,464	+1,905
Privately owned.....	415	481	+66
Total proprietary interest.....	2,974	4,945	+1,971

Source: Daily Statement of the United States Treasury

Banking Developments

As was suggested above, the banks again absorbed a large part of the increased public debt during 1941. This was not the only manner in which the growth of the arms program influenced banking, however. Heavy inventory investment and sizable private capital formation, both of which were either directly incident to the military program or created as a result of conditions produced by it, led to a very substantial advance in business loans.

Moreover, these asset gains, in combination with an upward revision of reserve requirements, a smaller gold inflow, and increased money in circulation, all were instrumental in halving the volume of excess reserves. Nevertheless, at the year's end the banking system still held reserves exceeding 3 billion dollars, capable under existing requirements of supporting a further credit expansion of considerable size.

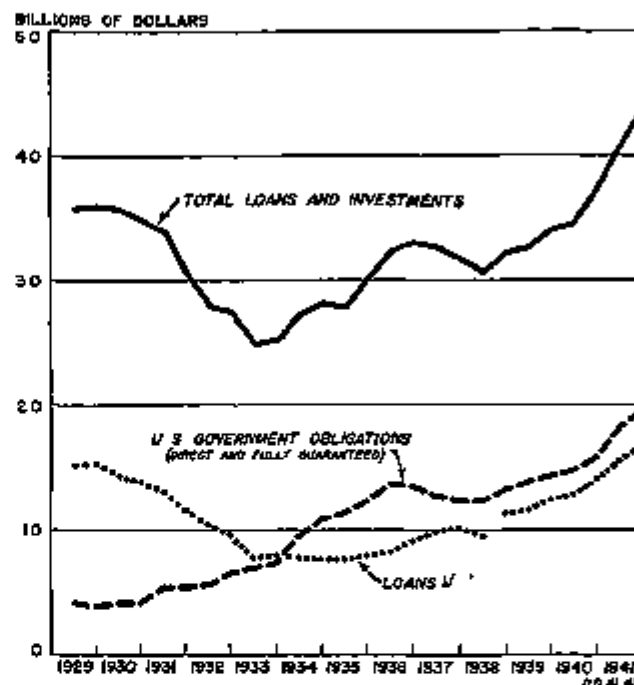
Growth of Loans and Investments.

Altogether, loans and investments of all Federal Reserve member banks increased approximately 8.2 billion dollars during 1941. Roughly half of this expansion consisted of additions to government bond portfolios; so that at the end of the year member banks held Federal issues totaling about 19.2 billions, or 46 percent of the marketable public debt. However, only about one-fourth of the additional debt created in 1941 was absorbed by the banks.

The balance of the increase in loans and investments consisted almost entirely of commercial and industrial loans. A survey made by the Federal Reserve Board in April showed that about two-fifths of all such loans subsequent to July 1940 had been made to industries engaged heavily in production related directly or indi-

rectly to the armament program, and there is evidence that approximately this same ratio held through the second and third quarters. However, the growing magnitude of the war program, plus priority restrictions which operate to curtail almost all nonessential investment, undoubtedly will increase the proportion of bank loans required to finance investment related

Figure 35.—Loans and Investments of All Member Banks on Call Dates, End of June and December



¹ Data prior to December 1933 exclude all loans on securities, regardless of purpose, and loans to banks, beginning with December 1934 only loans for purchasing or carrying securities and loans to banks are included. This change in classification is indicated by a break in the curve. "Total Loans and Investments" include all types of loans.

Source: Board of Governors of the Federal Reserve System.

to the armament program, even though the rate by which the aggregate of loans has been expanding should be curtailed.

Table 34.—Loans and Investments of Weekly Reporting Member Banks, 1940-41

(Millions of dollars)			
Item	Dec 31, 1940	Dec 31, 1941	Net change
Commercial, industrial, and agricultural loans.....	5,013	6,725	+1,712
Loans for purchasing and carrying securities.....	1,049	858	-191
Other loans.....	3,323	3,683	+360
Total loans.....	9,385	11,266	+1,881
Investments in U. S. Government obligations.....	13,402	15,049	+1,647
Other investments.....	3,575	3,666	+91
Total investments.....	16,977	18,715	+1,738
Total loans and investments.....	26,362	30,081	+3,719

Source: Board of Governors of the Federal Reserve System.

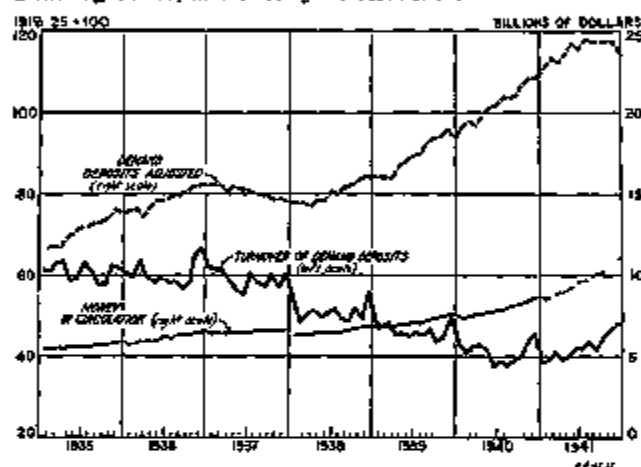
The rise in loans and investments was the dominant factor accounting for an expansion of deposits. Deposits in weekly reporting banks (including United States Government deposits) increased 2.4 billion dollars.

during 1941, bringing the total of such deposits to over 25 billion at the close of the year. In conjunction with the larger amount of money in circulation, the expansion of demand deposits brought the volume of liquid funds to a level far higher than any previously attained.

Decline in Excess Reserves.

The expansion of deposits required an addition to reserves of more than 800 million dollars. Furthermore, reserve requirements themselves were raised to the maximum permitted under existing legislation: 26 percent for central reserve city banks, 20 percent for

Figure 36.—Demand Deposits, Adjusted, and Index of Annual Rate of Turn-Over of Demand Deposits, Adjusted for Seasonal Variations, in Reporting Member Banks in 101 Leading Cities, and Money in Circulation



Note.—Data for "Demand Deposits, Adjusted," represent deposits other than interbank deposits and United States Government deposits, less cash items reported as on hand or in process of collection, figures are for Wednesday nearest the end of each month. Data for "Annual Rate of Turn-Over of Demand Deposits" are based upon the relation between debits to individual accounts and demand deposits in reporting member banks in 101 leading cities, the base period for the index is a daily average for the years 1919 through 1925. Data for "Money in Circulation" are as of the end of each month.

Sources: Demand Deposits, Adjusted, Board of Governors of the Federal Reserve System; Annual Rate of Turn-Over of Demand Deposits, Federal Reserve Bank of New York; Money in Circulation, U. S. Treasury Department.

reserve city banks, and 14 percent at country banks. This action was made effective November 1 and increased required reserves by nearly 1.2 billion dollars.

Excess reserves were reduced further by an actual drain on reserve balances as a result largely of an unusually great demand for more circulating media which was not offset by new funds. Increased transactions incident to higher business activity was the main factor in expanding money in circulation by the record sum of 2.4 billion to an aggregate of 11.2 billion at the end of the year. In recent years new funds from additions to the monetary gold stock have been more than ample to take care of the steadily rising volume of money in circulation; however, for reasons set forth below in the section on international finance, monetary gold increased by only 741 million in 1941 as compared with 4.4 billion in 1940. Other factors affecting the level of excess reserves are shown in table 35.

New York city banks lost reserves to a somewhat greater degree than other banks, a circumstance which

contributed to a slight hardening of money rates toward the year end. However, reserves still were distributed widely and fairly evenly.

Table 35.—Factors Affecting Total and Excess Reserves of Member Banks, 1941

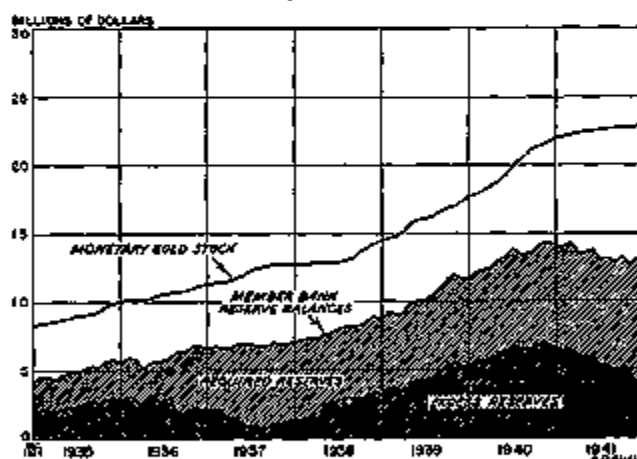
(Millions of dollars)			
Item	Dec 31, 1940	Dec 31, 1941	Net change
Factors of increase			
Monetary gold stock	21,995	22,737	+742
Treasury currency outstanding	3,067	3,243	+176
Federal Reserve bank credit outstanding	2,274	2,361	+87
Nonmember deposits and other Federal Reserve accounts	2,016	1,651	-365
Total			+625
Factors of decrease			
Treasury cash	2,213	2,215	+2
Treasury deposits with Federal Reserve banks	208	307	+99
Money in circulation	8,782	11,100	+2,318
Total			+2,900
Reserve balances	14,020	12,450	-1,570
Required reserves	7,411	9,363	+1,952
Excess reserves	6,609	3,087	-3,522

Sources: Board of Governors of the Federal Reserve System

Interest Rates and Security Markets.

One of the most significant financial developments of the year was the stability of interest rates. Even in the face of a record capital formation, the structure of rates did not change widely, and those advances which did occur were not of an important magnitude.

Figure 37.—Monetary Gold Stocks and Member Banks Reserves, End of Month



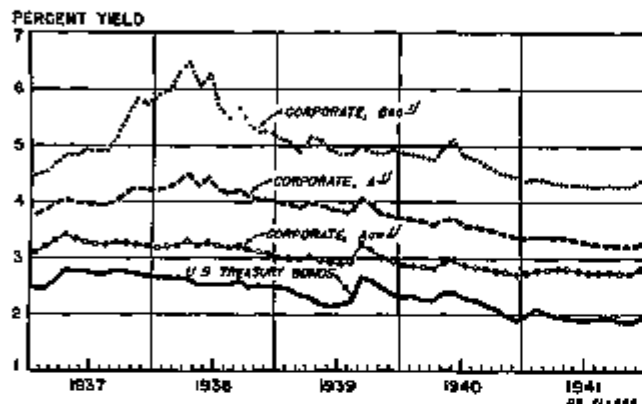
Sources: Monetary Gold Stocks, U. S. Treasury Department; Member Bank Reserves, Board of Governors of the Federal Reserve System

The high grade bond market, for example, maintained its strong position throughout the year. After a small increase during the first few months, bond yields declined steadily through November. However, following the declaration of War on December 7, and again after the Treasury's heavy demands for new funds in the middle of that month, yields rose slightly and it appeared, as the year ended, that the low point of long-term interest rates had been reached. The minor break in the Government bond market after our entrance into the War was quickly arrested by Federal Reserve

purchases; it is interesting to note that these purchases amounted to only 59 million dollars as compared with purchases of over 400 million after the outbreak of the War in Europe in September 1939.

The spread between high- and low-grade bonds continued to narrow, with the position of municipals improving relative to partially tax-exempt Government bonds because of the higher surtax rates imposed by the 1941 Revenue Act.

Figure 38.—Yield of Corporate Bonds by Ratings and of U. S. Treasury Bonds



¹ In the rating classification followed by Moody's Investors Service, Aaa indicates bonds which are and may be expected to remain the most conservative type of investment. Such bonds will tend to fluctuate in price with fluctuations of the prevailing long-term interest rates. Bonds rated A have distinct investment qualities, but do not have the elements of strength which would necessarily prevent their intrinsic worth from being affected by some special development which those rated Baa have definitely less of an investment and more of a speculative character. Each group includes a representative number of bonds.

Sources: Corporate Bonds, Moody's Investors Service, Government Bonds, U. S. Treasury Department.

Short-term commercial and financial rates remained steady. As has been mentioned, Treasury rates on new bills increased moderately in March because of new tax provisions, and rose rather sharply in November, as did the yield on notes.

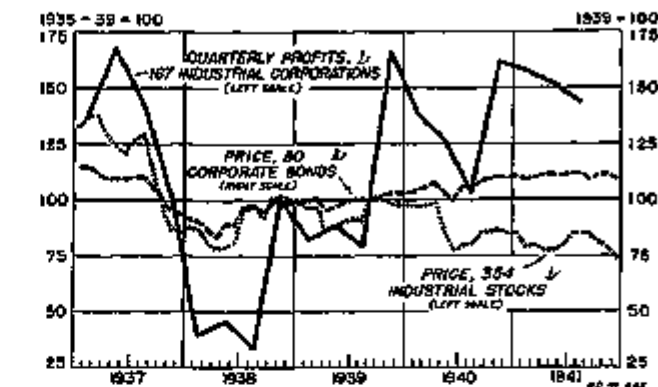
Lower Stock Prices.

One of the very few sectors of the economy which did not record some improvement during 1941 was the stock market. Notwithstanding one of the heaviest profit volumes in business history and the largest dividend payment since 1937, the average of all stock prices on the New York Stock Exchange actually was 15 percent lower in December 1941 than a year earlier. As compared with 1937, the December average had declined one-third, and it was down by two-thirds when contrasted with the average for the whole of 1929.

Traders and investors were more unimpressed with the uncertainties of the business future than with the current profit record, and only 170 million shares were transferred on the New York Stock Exchange, the lowest annual volume since 1918. The break in the market after our Declaration of War was only of minor significance in the general movement downward throughout the year. Falling stock prices and increasing dividend

payments combined to increase the average yield on 200 common stocks (as computed by Moody's) from 5.7 percent in December 1940, to 7.3 at the end of 1941.

Figure 39.—Indexes of Industrial Stock Prices, Corporate Bond Prices, and Quarterly Profits of Industrial Corporations



¹ Data do not include public utility or railroad companies. Data for corporate profits for the fourth quarter of 1941 were not available in time to include them in this chart.

² Data include industrial, public utility, and railroad companies.

Sources: Stock index and base data from which bond index was computed, Standard and Poor's Corporation, base data from which profits index was computed, Federal Reserve Bank of New York.

Relatively Small Volume of Corporate Issues.

The capital markets reflected the extensive role played by Government investment in the growth of capital during the past year. Corporate issues for new capital amounted to slightly more than 1 billion during the year. While this volume was high compared to flotations in the recent past, it was exceptionally low for a period of rapid expansion, failing to reach the levels attained in either 1936 or 1937. In addition to public financing of capital plant, business has relied to an increasing extent on internal financing made possible by the accumulation of idle balances during the past 6 or 7 years.

Railroads and public utilities continued among the heaviest borrowers from the organized corporate capital markets, accounting for over 60 percent of the new capital issues with a single offering in August—an excess of 200 million dollars—by American Telephone and Telegraph dominating the year.

In spite of declining bond yields, refunding operations were slightly lower in volume than in the preceding 2 years, aggregating a little more than 1.5 billion, with over two-thirds of the total taking place in the first 6 months. A large proportion of the long-term capital charges have by now been adjusted to the low interest rates which were provided in the past few years.

Municipal flotations dropped to 935 million, the lowest aggregate since 1937; furthermore, only 516 million of this represented new money, as many cities took advantage of the favorable position of municipal obligations in the bond market and reduced their interest costs through refunding.